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Approbation.

I *Have perus'd this Book, and find it Short, Easy, and Useful.*

Edward Strother, M. D.

A

Compendious and New METHOD

OF PERFORMING

Chirurgical Operations,

FIT FOR

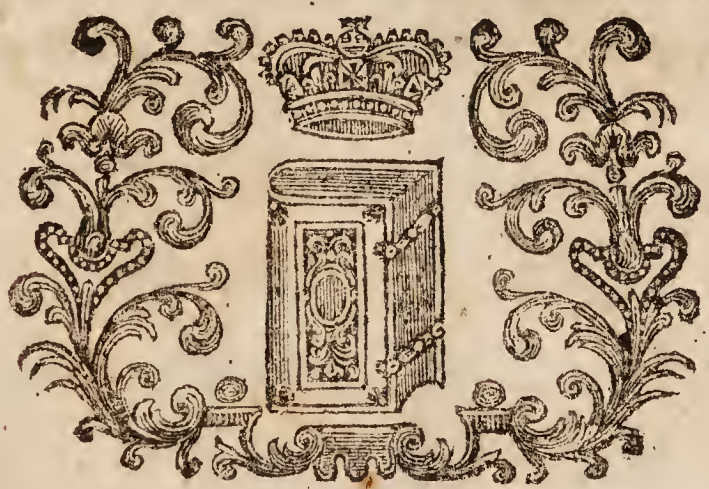
YOUNG SURGEONS.

To which are added,

Short and easy Directions how to Manage the *VENEREAL DISEASE.*

By EDWARD DUNN, Surgeon,
Belonging to the Royal AFRICAN Company.

——— *In est sua Gratia Parvis.*



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To His Highness

JAMES

Duke of *Chandois*.

May it please Your Grace,

SINCE I have the Honour to be employ'd as Surgeon in the African *Company, whose great Encourager Your Grace is, and under whose Influence there is no doubt of its being prosperous and thriving, I could not throw these little Labours, the Fruits of my leisure Hours, at the Feet of a more noble, more judicious, or more worthy Patron, than Your* Grace's; *they are not worth Cen-*

Censure, however Your Highness's Protection will give them Sanction; and if they prove of any Use to the younger Surgeons employ'd in the Company, I have my Aim, and shall not cease, till I have run thro' all the Parts of Surgery and Physick, I have found necessary, in the 20 Years I have us'd the African *Coast, for the Preservation of the Lives of those plying there, as also of the Company's main Branch of Profit.*

I am, with all due Submission,

MY LORD,

Your Highnesses, and the Company's most Obedient, most Faithful, and most Humble Servant,

EDWARD DUNN.

TO THE

YOUNG SURGEONS.

IN publiſhing this ſmall Volume, it is propos'd only to teach the Manner of performing the Operations of Surgery, by a Method more ſhort and eaſy, than has been hitherto treated on by Authors.

NOTHING is advanced, which is not grounded on the Practice of

of the moſtable *Surgeons* of the preſent Age. No *Diſeaſes* are here commented upon, leaving every one to make ſuch Syſtems as beſt ſuits their own Imaginations: For it is more of Uſe to ſtick cloſe to the Operation it ſelf, which ought to be the principal Aim of thoſe, who wou'd apply themſelves to Surgery.

It is not pretended, that we have compil'd a finiſh'd Piece, for it is well enough known, that Uſe and Practice, add always Perfection to Arts: But at leaſt, there is Room to hope, that you will find ſomething more here, than what is expected.

I have added a Treatiſe on the *Venereal Diſeaſe* explain'd ſo clear, that

that you may, by following the Rules here prescrib'd, surely remedy all the Accidents, which accompany those troublesome Indispositions.

MEAN while all this Labour must be look'd upon as a simple Essay. Time may make it better.

IN fine, if you don't find in this Discourse, all that Delicacy and Turn of Language some may expect, it is sufficient to say, that it is design'd only for Instruction.

THE use, this small Sketch will be of, to young and unexperienc'd Surgeons, is very evident; for leading them by the Hand in every Step of an Operation, in a

clear, eaſy and ſuccinct Manner, is the Deſign; where ambiguous Circumlocutions are purpoſely avoided, and uſeleſs Diſtinctions, are dropp'd. The more any Artiſt incumbers his Diſcourſe, the more he puzzles his Hearers or Readers, they loſe the uſeful and neceſſary Rules in giving Ear to the trifling, and leſs profitable Parts of the Harangue, and are forc'd, when they apply to Practice, to drop thoſe Superfluities by the Help of a good Judgment. Here no more is ſaid, than what conduces to direct in a conciſe, eaſy, and plain Style; nor yet leſs than ſuffices.

It is neceſſary a young Surgeon ſhou'd ſee Operations perform'd, becauſe

becauſe he wou'd then better perceive the Uſe of this Abridgement; however, if he has never ſeen any, or has loſt the Notion of any one Operation; in reading this little Book, he recovers it, or eaſily conceives how it is to be done, by a very little Labour.

MOREOVER, Patients will call in Phyſicians to be preſent, to adviſe or overlook; their Buſineſs is not to operate, but they ought to know, in what Manner the Surgeon ſhou'd perform it, and when it is of abſolute Neceſſity, and yet without Loſs of Time; conſult this ſmall Volume, it may be depended upon to anſwer their Ends.

To the young Surgeons.

Art is long, and Life is ſhort, ſays *Hippocrates* : The Buſineſs of Life is not Study, but doing Good : It ſhews therefore the Juſtice of an Author, when he proportions the Rules of Art to the Length of our Days. And when all that can be ſaid on any Point, is couch'd in a little Room, then this Proportion may be ſaid to be juſtly obſerv'd, which I hope the young Practitioners in Surgery, will find verified in this Treatiſe.

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A Compendious and New METHOD OF PERFORMING *Chirurgical Operations*, &c.

CHAP. I.

Of the Operations of Surgery in General.

THE Art of Phyſick treats of three Points: *Diet* is the firſt and moſt common; *Pharmacy*, is the moſt uſeful; and *Surgery*, the moſt neceſſary, the chief, and moſt evident. It lays open to us all the

Machines, and without its industrious Operations, Physick is blind.

Surgery endeavours the Cure of Maladies of the Body, in four different Manners; it unites the Parts divided, it divides them when they are united contrary to the ordinary Course of Nature; it takes away extraneous Bodies; and lastly, it adds some Organ, which is wanting for the Necessity, or the Perfection of a Body.

The Business of Surgery, is a methodical Application of the Hand to a human Body, to give and conserve Health, as the Word *Chirurgus* signifies, because what is done is perform'd σὺν τῇ τῶν χειρῶν ἔργῳ by a Handy-work.

Some Authors divide the Operations according to their Essence, or rather according to their *Genus*, into *Syntheſis*, (Composition), *Exæreſis* (taking away) and *Proſthesis* (Addition). Others according to the Diseases, and some Part, where they are made.

The

THE Operations very often take the Name of the Part, where they are made, for Example, a *Bubonocele*, the *Hare-Lip*, and *Caſtration*.

THERE are three general Operations; the firſt and moſt common is *Syntheſis*, it comprehends all the Operations, and all the Means for reuniting the Parts.

IT is call'd *common*, becauſe it is convenient for all the reſt, and contains under it Bandages, Junks, and many of the Inſtruments which are uſeful in Surgery.

A particular *Syntheſis*, is only uſeful for certain Diſtempers, and certain Parts. One replaces the fractur'd and luxated Bones, and another the *Omentum*, and Inteſtines, as in *Hernia*'s.

Diæreſis is an Operation, which ſeparates the Parts, which were united contrary to their natural Diſpoſition.

Exæreſis is an Operation, by which we extract extraneous Bodies out of any Part.

Lastly, *Proſtheſis* ſupplies ſome Organ, which is wanting for the Neceſſity, or the Perfection of a Body.

However Syntheſis, Diæreſis, and Exæreſis, almoſt always accompany each other in the Operations.

The Operations of Surgery are divided into two Parts: the firſt is operative, and conſiſts in the Addreſs of the Surgeons Hands. The ſecond is *theoretical* or *medical*, it regulates the Conduct of the Surgeon in the adminiſtration of Remedies, which are neceſſary to make its Operations ſucceed.

To operate well, it is neceſſary to have a perfect Knowledge of the Structure of the Parts, of their Situation, and their Uſes; all which is underſtood by a Skill

Skill in Anatomy. The Diſeaſe, its Cauſe, its Riſe, its Progreſs, its State, and other Circumſtances muſt be known, to the End they may paſs a Judgment on the Neceſſity of the Operation, and of the Remedies convenient for the Diſeaſe; Laſtly, they ought to know perfectly well all the Rules of the Operations; which is obtain'd by ſeeing good Practitioners operate, by reading the Obſervations of Practitioners, and by making Trials alone.

Before one performs an Operation, four Things are to be well obſerved.

The firſt, what Operation it is; the ſecond, why it is to be perform'd; the third, whether it be neceſſary, or poſſible; and the fourth, the manner of performing it.

As for the firſt Point, one knows the Operation by its Deſcription. For the ſecond, it is perform'd, becauſe the Diſeaſe cannot be cur'd otherwiſe; for the third,

third, it will be judg'd poſſible and neceſſary by examining the Diſeaſe, and the Strength of the Diſeaſed: For the fourth and laſt Point, it is the Art or Manner of performing each Operation.

OPERATIONS ought to be perform'd readily, gracefully, ſurely, and dextrouſly.

THREE Things ought to be propos'd before they perform an Operation, to wit, what is to be done before they begin; what, during the Operation, and what, after it is perform'd.

CHAP. II.

Of Sutures in General.

SUTURE is a Sort of Syntheſis, which by the Means of a threaded Needle, reunites the ſoft Parts, whilſt the Wound is freſh.

SUTURES are made to reunite Wounds; but they are made principally, becauſe neither the Bandage, nor the Situation of the Part can compaſs the Reunion.

THE Difference of Sutures ariſes from two Things, to wit, from their Uſe, and the Manner of making them.

FROM their their Uſe, they are call'd Incarnative, Reſtrictive, and Conſervative.

THE

THE *Incarnative* is five-fold, the interſected, the quill'd, the twiſted, the claſp'd, and the dry Stitch.

THE *Reſtrictive* is threefold, the Skinners, the Shoemakers, and the Tailors.

THE *Conſervative*, draws the Lips of the Wounds together, where there is a loſs of Subſtance; but no Stitch is made when this Loſs is great.

AS to the manner of making theſe Sutures; they are made with a Solution of Continuity, or without ſuch a Solution; where a Solution is made, 'tis done in a Part ſeparated or continuous.

THOSE made in a continuous Part, are four.

THAT of the Skinner, or overcaſting.

THAT of the Tailor, or lacing.

THAT

THAT of the Shoemaker, and that which goes from within outwards, and from without inwards.

THOSE which are made at a Point ſeperated are four, to wit, the interſected, the quill'd or pegg'd, the twiſted, and the claſp'd.

THAT which is made without Solution of Continuity, is the dry Stitch.

SUTURES are uſeleſs for tranſverſe and oblique Wounds, where Bandage is not of uſe; they are uſed where Wounds have Angles; and laſtly, as the Ancients have added, for Wounds that are attended with Hemorrhages; and here it was they practis'd the Suture call'd *Reſtrictive*.

IT muſt be obſerv'd, that Sutures are not us'd to Veſſels, as the Ancients did, but there we make Ligatures. Sutures again, are convenient for Wounds, where there is Motion.

THERE are ſeveral Wounds, where Sutures are not practis'd.

Firſt, To Wounds alter'd by the Air.

Secondly, To contus'd Wounds.

Thirdly, To Wounds where there is a Loſs of Subſtance.

Fourthly, To venemous Bites.

Fifthly, To Wounds accompanied with Inflammation.

Sixthly, and *Laſtly*, To Wounds where the Bones are bare.

THE Ancients forbid to ſtitch Wounds at the bare Bone; however if a Wound is without Contuſion, it muſt be ſtitch'd immediately.

BE-

BEFORE making a Suture, you muſt extract all extraneous Bodies, and ſuffer the Wound to bleed moderately.

THE Apparatus proper to make Sutures with, are three, to wit, the Cannula, the Needle and the Thread.

THE Needles muſt be of different Sizes and Figures; ſome muſt be ſtreight, others crooked: The ſtreight ſhou'd be either flat, round, or angled; the crooked greater and ſmaller.

THE Thread ought rather to be made of Lint, than Silk, becauſe this cuts and grows more eaſily looſe than that.

THE Thread ſhould be wax'd, and even may be doubled if occaſion requires.

THE Cannula may be crooked, or ſtreight, it muſt alſo be made with an Eye, to paſs the Thread. The Head of the Needles muſt be channel'd to enchaſe

the Needle, to the end it may run more freely.

THE Surgeon muſt have ready his Compreſſes, Plaſters, Bolſters, Bandages, Aſtringents, and all other Dreſſings fit for his Operation.

IF any conſiderable Inflammation follows the Suture, it muſt be ſlacken'd immediately, in order to remedy the Accidents, which attend it: And as ſoon as the Accidents ceaſe, the Suture muſt be again drawn cloſe, as at firſt.

CHAP. III.

CHAP. III.

Of Sutures in Particular, and the Manner of performing them.

THE Interfected is a Suture at a Point feperated, it is the moft uſual in Practice, we take a Needle, crooked or ſtreight, as occaſion ſerves, we paſs it from without inwards, we cut the Thread of each Side long enough to have opportunity to tye it eaſy, we may make as many Stitches as are neceſſary. The Stitches being made, we begin at that in the Middle, making it on the Side oppoſite to the running out of the Matter, according to the Situation of the Part. We make a ſimple Knot immediately, upon which we apply a ſmall Compreſs, then the Surgeon's Knot, and laſtly a running Knot, in order to untie upon

upon Occaſions, to wit, when Accidents ſupervene.

THE Diſtance of Stitches ought to be half an Inch from each other, according to the greatneſs of the Wound. If it be ſuperficial, a Cannula is to be us'd; but if deep, the Fingers are moſt convenient.

THE Quill'd is the ſecond Sort of incarnative Suture, it is uſeful in deep Wounds, which happen to very fleſhy Parts, as to the Buttocks, Thighs, and to Parts which have Motion, ſuch as the Belly. This Suture was much in uſe with the Ancients; but at preſent, we don't uſe it. We take two Quills, or two ſmall Pegs, of the Length of the Wound, we paſs a Needle threaded with a double Thread, to the very bottom, and we cut its Thread of a ſufficient Length.

THE Pegs or Quills are plac'd among the Threads, in making a double Knot from one Part to the other upon the Quills,

and

and making them approach to each other, as much as is neceſſary.

The twiſted Suture is the third Sort, it is hardly us'd, but in the Hare-Lips. It is made thruſting the Needle into the Wound, and twiſting the Thread acroſs, and around it.

The Claſped is the fourth Sort of incarnative Suture; the Antients made it with Claſps, which they thruſt from one Lip to the other, and they apply'd ſo many Claſps, as they pleas'd to make Stitches. This Manner of reuniting Wounds is uſeleſs, if not ridiculous, for two Reaſons: The firſt is, becauſe the Pain wou'd be continual; the ſecond is, becauſe theſe Claſps wou'd not penetrate to the bottom of the Wound, and by Conſequence the reunion cou'd not be made.

The dry Stitch is the fifth Sort, and the laſt of the incarnative Sutures. It is ſo call'd, becauſe it is made without Diviſion. It is not uſeful, but for ſuperficial

cial Wounds, and particularly in Wounds of the Face, to preſerve the Beauty of it: But is ſcarce in uſe, for we uſe Needles to the Face, as in all other Wounds; but to the End the Scar may appear leſs, they muſt be more fine.

We take two Pieces of new Cloath, which we cut into a triangular Form, of the Size of the Wound. The Liſt of the Cloth muſt be on the Side of the Angles; we make ſo many Angles, as we would make Stitches, and we fix a Taſſel to each Angle; this Cloth is applied with an agglutinating Medicine, which the Ancients did uſually with Maſtick, Frankincenſe, Sarcocolla, powder'd and incorporated with the White of an Egg; but Glue holds much better than this Mixture. We muſt apply the Cloth at half a Fingers Diſtance from the Edges of the Wound, and let it dry before we offer to draw the Lips of the Wound together; we make a ſingle Knot and a running one, as in other Sutures, and laſtly, we apply a Bolſter dipt in any Balſam over it.

CHAP. IV.

Of Reſtrictive Sutures.

THE firſt of Sutures which reſtringe the Blood, is that of the *Skinner*; the Ancients practis'd it to the Veſſels, as we have ſaid above, we do not practiſe it at preſent, but to the Inteſtines; we take a Needle which is ſtreight and ſmall, threaded with raw and flat Silk, making the firſt Stitch beyond the Wound, piercing at the ſame Time the two Lips, and continuing till it be ſowed, we let one End of the Silk hang out of the Belly.

THE Tanner and Taylor's Suture, and that which is made from without inwards, and from within outwards, are all uſeleſs and ridiculous: The multiplicity of Stitches, wou'd preſently cut the Lips

of the Wound. All these Sutures are described in the Ancients, particularly in *Celsus*; but we may believe, that they never made use of them, since they must have then found them inconvenient, and never recommended them to us.

The Surgeon must observe many Particulars, before he cuts Wounds.

1. To take hold of the Lips of the Wound gently with his Fingers.

2. To avoid pricking any Vessel without Necessity.

3. To pierce both the Skin and Flesh.

4. In deep Wounds, not only to take up the Surface, or the Skirts of them, but to go to the very Bottom, because it is the Bottom which recovers first; for there wou'd be a Cavity, if we did not go to the very Bottom of the Wound, which wou'd oblige us to undo the Stitches, of which great Care must be taken.

5. To

5. To make the Stitches at a convenient Diſtance from each other.

6. To begin at the Angles, if there be any, and to draw the Lips of the Wound together, before we make a Knot.

The Ancients, after having made the Sutures, ſtrew'd the Edges of the Wound with incarnative Pouders, to make it, according to their Notions, regenerate Fleſh; but the reunion of Wounds is an Action from Nature, and their Pouders only ſerve to impede it, in making a Plaſter, which ſtopp'd the Paſſage of the Blood, and hinder'd the Edges from recovering. There is in fine, no Balſam like Blood for the Regeneration of Fleſh; it is the ſame as the Grafts to the Tree, the nutritive Juice to the Plant running thro' the ſmall Tubes, which make up the Texture of it, it is the true Cauſe, why the Graft reunites at the Inciſion made on the Tree; it is alſo the ſame Thing for the Formation of the *Callus* of the Bones,

whoſe Subſtance is nothing but a Compoſition of ſmall *Canals*, or Veſſels.

Upon which Account, we may ſay, that the Antients had only a very confus'd *Idea* of the Generation of a *Callus*, when they ſaid, that it was an Excrement of Fleſh, or the Remainder of the Nouriſhment of the Bone, that made it.

If there be Dexterity requir'd to make Sutures, there is leſs to undo them. We undo the interſected, in cutting every Stitch upon its Knot, and putting the Probe under it, and the Finger upon the Edge of the Wound to make ſure Work, drawing the Thread without Violence.

We take off the twiſted Suture by untwiſting gently the Thread, and drawing the Needle by little and little.

If we have made uſe of the quill'd Suture, we muſt undo it by cutting each Stitch upon the Quill.

THE dry Stitch is undone by moiſtning the Cloth, which is glued on with warm Water.

IF we are oblig'd to make uſe of the Skinner's Stitch to the Inteſtines, the Stitches rot and come away with the Matter; 'tis the ſame thing, as to the Ligature of the *Omentum*; we muſt take Care to draw the Threads away, which offer at the Orifice out of the Belly.

IN fine, it is the Surgeon's Duty to undo the Sutures, as ſoon as the Wound is reunited; which happens ſooner, or later, according to the Place where the Wound is, and the good or bad Diſpoſition of the Patient.

CHAP. V.

CHAP. V.

Of the Gaſtroraphia.

THE *Gaſtroraphia*, or Suture of the Belly, is made, when the Wounds are large there: If the Wound be ſmall, and not attended with bad Accidents, there is no Occaſion for the Suture, we may only keep a ſmall Tent in, that the Matter may have a free *Exit*. If the *Inteſtines* or *Epiploon* come out at the Wound, we muſt preſently, before we replace them into the Belly, examin whether they are injur'd by an Inflammation, or Mortification; whether there be any Wound in the Inteſtine, and whether it be large, we muſt make the Skinner's Suture. The Omentum, being a fat Part, is never expos'd much to the Air without a Mortification, which

which is evidently known by its livid Colour, and its Coldneſs; this dead Part muſt be cut off; we paſs a Needle threaded with a double Thread into the ſound Part, making two Knots at the two Sides; then we cut into the Quick an Inch above the Ligature, ſuffering a long End of the Thread to hang out of the Wound, we replace the Inteſtine firſt, and next the Omentum.

The Wounds often penetrate the Belly, without hurting the Guts, and 'tis then, that they are fill'd with *Flatus*, in ſuch a Manner, that they won't enter by the Wound again. Authors have already ſaid, that there were only three Things to be done for diſſipating the *Wind*, to wit, either Fomentations of warm Wine, or boiling Chamomile and Melilot Flowers, or applying live Animals ſplit to the Part, *Paræus* alſo adviſes to make many Punctures into the Inteſtine with a round Needle, becauſe it only divides the Fibres without cutting them; but the moſt ſure Method is to uſe all our Endeavour to replace

place it, into the Belly; Nature it ſelf will then diſſipate the Wind. If all theſe Means are of no uſe, we muſt at laſt come to the Dilitation of the Wound.

Before we dilate the Wound, we muſt obſerve three Things; the firſt, is the Place where we muſt dilate; the ſecond, is the Largeneſs of the Dilatation; the third is, the Manner how it is to be done.

If the Wound be above, we muſt dilate below; if it be tranſverſe, cut from the *Linea alba*; it is not very eaſy always to know the Direction of the Wound, by reaſon of the Strangulation of the Inteſtine. The Largeneſs of the Dilatation depends upon the greater or leſs Part of the Gut, or Omentum, which are thruſt out of the wounded Part.

The third Thing ſhews us, how the Wound ought to be dilated, we put the Inteſtines gently in Order at the Sides, and put upon them a Compreſs dipt in warm

warm Wine, applying the Hand gently above, we endeavour to introduce a Probe, channell'd, into the Belly; we muſt introduce it perpendicularly, turning it from Side to Side, and take Care not to engage the Inteſtine between the Probe and the *Peritonæum*; and alſo it is good to draw it a little towards us; then, holding the Probe in the Left-hand, to take in the right a crooked Biſtory, or Sciſſers, to ſlide the End into the Channel of the Probe, and cut more outwards than inwards; and laſtly, reduce the Inteſtine and jolt the Sick a little.

It is not always eaſy to introduce the Probe, for the inflated Inteſtines, are an invincible Obſtacle, and here it is, the Surgeon's Skill is requir'd; he puts one of his Fingers, where he would make the Dilatation, and as it is the Skin, that always occaſions the Strangulation, he cuts it with the Point of the Biſtory, in conducting it near his Nail, in ſuch a Manner, that the Inteſtine is not at all touched. It is eaſy after that, to introduce

the Probe, and more commodiouſly to dilate, as we have already ſaid. In all Affairs, which depend upon Dexterity of the Hands, it is much more eaſy to comprehend them by ſeeing than reading, and there is a great Difficulty in giving a lively and clear Deſcription of thoſe Affairs. The Inteſtine and the Omentum reduc'd, you then are to make the interſected Stitch.

The Threads of the Stitch of the Inteſtines and *Omentum*, are drawn out of the Wound; and are rang'd on each Side of the Tents, to hang them by, and to agglutinate them with the Wound; and alſo if we cou'd order it ſo, that the Patient were plac'd upon his Belly, the Wound of the Inteſtine wou'd more readily reunite in growing to the *Peritonæum*.

To make the interſected Stitch in the Belly, we muſt have two crooked Needles, threaded with the ſame Thread; having mark'd the Stitches with Ink, we cauſe

cauſe an Aſſiſtant to hold his Hands on each Side of the Wound upon the Belly, to hinder the Impulſe of the Inteſtines, and we cauſe the Patient to hold his Breath. We introduce the fore Finger into the Belly, making the Needle ſlip upon the Finger, for fear of hurting the Inteſtine; we hold the Edge of the Wound with the Thumb and fore Finger, we peirce from within outwards, peircing the *Peritonæum*, the Muſcles, and the Skin altogether; and above all, we take Care to draw the *Peritonæum* to the Edge of the Wound before we pierce, to the End we may avoid a *Hernia Ventralis*, taking more from within than outwards. The firſt Needle being paſs'd, we turn the ſame Finger in the inſide, to take hold of the other Lip of the Wound, without drawing it out, conducting the Needle upon the Finger, as we did before. We muſt then take away the Needles, leaving the Thread, and make as many Stitches thus as are neceſſary. We begin to tye that of the middle firſt, and put a Tent in before we tye the Knots; the

Remainder of the *Apparatus* conſiſts in an Embrocation with Oil of Roſes, the Napkin, and the Scapular Bandage.

ALL Wounds which penetrate into the Belly, are always very dangerous when large, by Reaſon of the *Omentum* and Inteſtines promptneſs of eſcaping thro' the Aperture. The Reſpiration, and the Motion of the Muſcles of the Belly, which continually preſs the Inteſtines, alſo force them to run thro' the Wound, even when it is not very large, becauſe theſe Parts hanging looſely in the Belly, it is always eaſy for them to eſcape out at the Orifice; ſomewhat like this happens to Perſons ſqueezing Paſt in their Hands, where we ſee it ſlip through the open of the Fingers, becauſe it finds no Reſiſtance, to hinder its eſcape. We muſt again remark, that the Inteſtines being hurt, they come more readily out at the Orifice of the Wound, becauſe they don't then ſo eaſily fill with Wind.

THE *Omentum*, which is of a fatty Subſtance, is never long expos'd to the Air without being corrupted; the Reaſon is, becauſe being compounded of little Bladders, in which the Fat is carried thither by the *Vaſa adipoſa* of *Malpighi*, the cold Air coagulates and fixes in a very ſhort Space of Time this unctuous Subſtance, which being ſtopp'd in the Veſſels, ferments, corrupts, and grows acid, which gives Room to the Salts to diſentangle themſelves, to become acrimonious and corroſive, to break and tear the Texture of the *Veſicules* which contain them; from whence happen alſo that livid Colour, and that ſtinking Smell, which we then feel, becauſe it is a true Gangrene.

THE Inteſtines never iſſue out at the Wound, but they immediately fill with Wind, from being expos'd to the Air. Let us take a view of the Conjectures, why theſe *Flatus* are generated; the cold Air which environs the Inteſtines, curbs the

the Circulation of the Juices, which paſs'd in thoſe Canals, I mean in the Texture, which compoſes their Subſtance; from whence the Circulation is not only retarded, as I have obſerv'd, but alſo the Chyle and other Liquors, which are contain'd in the Inteſtines, ſuch are the Bile and Pancreatick Juice. The Ferment alſo which ouzes thro' the Glands of the Inteſtines, and the Excrements themſelves are not ſo liquid as they wou'd be by their natural Heat: Which is the Occaſion of the Fermentation of theſe Contents, and of the Elevation of Vapours, which cannot paſs off by the Pores of them, becauſe that the Coldneſs of the Air, as we ſay, has almoſt ſhut them up; and this is the Reaſon, why hot Medicines, whoſe Particles are warm, volatile, ſpirituous, and penetrating, can diſperſe thoſe Winds, in opening the Pores, and in rarifying their condens'd Particles, which held the Inteſtines ſtretch'd like a Foot-ball.

A Wound in the ſmall Inteſtines is more dangerous, than that of the great ones; be-

becauſe the ſmall Tubes, which compoſe their Subſtance, are of a more cloſe Texture; from whence it happens, that the Reunion is made with greater Difficulty. Moreover the Chyle, which they contain eſcaping into the Cavity of the Belly, is often the Cauſe of the ſudden Death of the Patient.

The nouriſhing Gliſters, which the Ancients order'd for Wounds of the Inteſtines, are of no uſe, becauſe we meet with few of the *vaſa Lactea* in the large Inteſtines; and becauſe the Valve of the *Coſon* hinders the Liquor from paſſing into the ſmall Guts. But when even we might ſuppoſe, that it did paſs, is there not rather Room to believe, that not being attenuated enough, it could not paſs by the Mouths of the *vaſa Lactea*. The Example, which a modern Author brings, of Gliſters made up of Spirit of Wine, and which fuddle, ſays he, more readily that Way, than by the Mouth, concludes nothing againſt us, ſince it is a ſpirituous Liquor, which heat Volatiliſes, and makes

it

it pass immediately into the Fibres of the Intestines, and from thence into the Mass of Blood.

The Wounds of the Intestines are not always mortal, as the Ancients believed. Those of the Liver, the Spleen, the Kidneys, the Bladder, the Heart, and the Lungs, don't usually occasion Death, but when there is some large Vessel wounded, and that renders them mortal.

We have heard of a Soldier, who passed his Excrements thro' a Wound, which he had received in one of the great Guts, for 12 *Years* together, and whose Orifice was so glued and cicatris'd with the Muscles and Teguments, that it was his *Anus*, thro' which the Fæces pass'd during Life. We find in Practitioners a great Number of Facts upon Wounds, penetrating the Belly and Breast, and in which have sometimes been found Parcels of the Substance of the Lungs and the Liver, where, however, the Patients have been perfectly cur'd, as you may see in the Cen-

Centuries of *Hildanus*, *Schenkius*, and others.

It has been known, that a Perſon receiv'd a Wound in the Breaſt by a Sword, where a Portion of the Lobes of the Lungs was engag'd between the Ribs, and made a conſiderable Tumour, which was extirpated by a Ligature, and yet the Patient was cur'd in a very little Space of Time after.

CHAP. VI.

Of the Exomphalos.

THE *Exomphalos*, is either taken for the Diſeaſe, or for the Operation. It is a Tumour of the Navel, occaſion'd from Humors, or the Parts: That which is occaſion'd by Humors, if from Water, 'tis call'd *Hydromphalos*; if from Wind, *Pneumat-omphalos*; that which is caus'd by the Parts, is either from the Inteſtines, or the *Omentum*, or both together; they take the Name from the more prevailing part; if it is the Inteſtine, we call it *Enter-omphalos*; if the Omentum *Epipl-omphalos*; if there are more of the Inteſtines ingag'd, we call it *Enter-epipl-omphalos*; if it be a fleſhy Subſtance, we call it *Sarc-omphalos*; if the Veins dilated be the

the Cauſe of it, is call'd *Varic-omphalos*; or *Cirſ-omphalos*; if it be an Artery, 'tis call'd *Aucuriſmat-omphalos*; or *Iring-omphalos*.

THE *Exomphalos* made by the Parts, being engag'd, is often occaſion'd by violent Exerciſe, which dilates the *Peritonæum*, or it may alſo proceed from an internal Cauſe, as from Humours watering and relaxing this Part, in ſuch a Manner, that the Inteſtines, by the frequent Shocks, dilate the *Peritonæum*, and make a conſiderable Tumour.

THE Peritonæum has two Places, very ſubject to be dilated, to wit, the Navel, and Place where the Rings of the Muſcles are, thro' which the ſpermatick Veſſels paſs.

AT the Navel, the external Coat ſeparates it ſelf from the internal, to wrap the umbilical Veſſels into the ſame, at the Rings of the Muſcles; ſo that the internal Membrane being no longer forti-

fied by the external, it is not in a Condition to reſiſt the Shocks of the Inteſtines, and it is this, which makes Way ſo frequently for *Hernia*'s.

THIS Diſeaſe may be cur'd in the beginning by Bandage and Aſtringents. If the Tumour be large, and of a long ſtanding in a Body of an ill Habit, we muſt not attempt the Operation at all.

WE muſt not perform it, but when the Tumour is of a moderate Size in a young Perſon, and where the Habit of the Body is good. There are in the Antients many Methods of performing this Operation; we will only deſcribe one, which is now out of Uſe, for being too barbarous.

AFTER having made the Patient move himſelf in Order to perceive the Extent of the Tumour more eaſily, they mark'd with Ink its Circumference, and made the Patient lie upon their Backs: Then they reduc'd the Parts into the Belly, cauſing

ſing a Servant to put his Hand upon the Tumour, and bidding the Patient to hold his Breath; then they paſs'd into the Navel a threaded Needle, to make a Handle, which they gave to hold: To aſſure themſelves, that the Parts were reduc'd, they made a ſmall Inciſion at the Top of the Tumour, paſſing the Finger quite round, to ſee whether there were any Adherence. Then they paſs'd two great Needles to the Bottom of the Tumour, like a St. *Andrew*'s Croſs; under the Needles, the running Knot, which they took Care to faſten every Day: At laſt the Tumour mortified, and an Eſchar fell off, which made a great Loſs of Subſtance. I know not, how they hinder'd the coming out of the Inteſtines. The Deſcription of this Operation gives Horror, and we ſhould be very Savage, if we attempted the Operation in this Manner.

THIS Operation is the ſame as that, which is perform'd in the *Bubonocele*, ſince

ſince it is a *Hernia*, which in every Circumſtance is the ſame.

THERE are two Reaſons which oblige us to perform this Operation. The firſt is, when there is a preſſing Neceſſity, and the Parts won't return: The Second is, when the Tumour is moderate, and the Parts ſtart out, and return eaſily in a young Perſon, and of a good Habit of Body; and that the Patient would be free from the Inconveniency of wearing a Truſs all their Lives.

WE make the Patient lye down upon a Bed on their Backs, and endeavour to reduce the Parts, as we did in a Wound of the Belly; the Difference is only this, that here the Inteſtines and *Omentum*, are cover'd again by the Peritonæum and Teguments, whereas in the *Gaſtroraphia*, theſe Parts are bare.

THE Parts being reduc'd, the Surgeon on one Side, and the Aſſiſtant on the other, lifting the Skin on high, makes an In-

ciſion with a Biſtory: The Dilatation of the Peritonæum being diſcover'd, we take ſome of it off, having cut it quite round, and the Remainder of the dilated Part comes away in Suppuration. We muſt alſo give the Ring ſome Stroaks with the Biſtory, upon the channel'd Probe, as we did to the Wound of the Belly, in order to procure a ſtrong Cicatrix, and to make the interſected Stitch, as in the *Gaſtroraphia*.

CHAP. VII.

CHAP. VII.

Of the Paracenteſis.

THE *Paracenteſis* is an Aperti-on of the Belly, or a Species of *Diæreſis* reduced under the Puncture, for evacuating the Water from Hydropical Perſons. It is deriv'd from the *Greek* Prepoſition παρά, *juxta*, and the Noun Subſtantive κέντρον, *Stimulus*; as if one ſhou'd ſay, τὸ παρὰ τὴν γαστέρα κέντρον, a Puncture on the Belly.

The Differences of a Dropſy, are drawn from their Matter, their Place and their Cauſes. As to the Matter, the one is a Collection of Water, call'd an *Aſcites*; another (of Wind, as the Ancients ſuppos'd, but as later Experience dictates) of Wa-

Water or Jelly in the Cells of the Omentum; and laſtly, a third of Phlegm, call'd by the *Græcians, Leucophlegmatia* or *Anaſarca.*

FROM the Place, the one occupies the whole Body, as the *Leucophlegmatia*, and the *Aſcites* the Belly; the *Tympanites* generally accompanies the two others. As for the Cauſes of them, we will not undertake to diſcant upon, becauſe we will haſten to the Manner of performing the Operation.

THE *Aſcites* being known by the Signs in a Body of a good Habit, we may perform the Operation, altho' it rarely happens to ſucceed; which however, we ſhou'd not attempt till Remedies have been ineffectually try'd.

THERE are two Methods of performing the Operation with the Lancet, or the the Trocar; as the Waters are almoſt always muddy, and often glairy, the Lancet makes a freer Paſſage than the Tro-

car; but then we are not so much Masters of the Water, when 'tis done by the Lancet, as by the Trocar.

We make the Patient sit in an Elbow Chair, to the End, that the Waters may run down; we pierce the Belly three or four Fingers below the Navel, at one Side of the *Linea alba*; if it is done with the Lancet, we fasten it with a Cloth wrapt around it; the Moment the Water flows out, we thrust the Lancet no further in, and before we withdraw it, we introduce a Probe, thro' which slip on a *Cannula*, and thrust it into the Cavity, letting the Waters flow according to the Strength of the Patient. Then the whole Secret is to stop the *Cannula* well with a Tent, and applying over it good *Compresses*, to hinder the Efflux of the Waters; for it often happens, that the Patient's dye by Reason of the great Quantity, whose *Exit* cou'd not be hindred; upon which Account it is, that now the *Trocar* is much preferr'd to the Lancet, because the Orifice shuts so exactly, there is no

Room

Room to fear the running out of the Waters. Of late in our *Hoſpitals*, it is grown a Practice, to take off all the Waters at once, in ſuch a Caſe 'tis not material, whether we uſe a Lancet, or a *Trocar*; for the Finger wou'd ſtop the Orifice of the Lancet, and hinder the flowing, as long as 'tis thought convenient. It never yet held good to evacuate great Quantities at once in morbid Bodies; nor can I, upon Inquiry, find many that have ſurviv'd this Practice; ſo that it may, without any *Reflection* be look'd on as no Invention, but an Error in Practice.

THIS Operation for the Cure of the *Aſcites* is not new, ſince *Hippocrates* ſpeaks of it in his *Book of internal Diſeaſes*; and *Ariſtotle* in his *Book of the Generation of Animals*. Almoſt all the Ancients have practis'd it, except *Eriſiſtratus*, who wou'd not ſuffer it to be practis'd. I have already ſaid, that it rarely was ſucceſsful; nevertheleſs they who are young, ſtrong, robuſt, and with-

out a Fever, or who have long Intermiſſions, may ſometimes recover; but for ſuch as are of an ill Habit, and whoſe *Viſcera* are chang'd by the *Acrimony* of the Waters, it is very difficult to eſcape this Deluge.

It happens ſometimes, that the Waters are ſhut up in a *Cyſtis* thicker than a *Parchment*, which forms a Bag, which ſeizes the whole *Abdomen*.

The ſaline Parts of this Liquor, which is a true Brine, harden the *Viſcera*, and *Peritonæum* very much, which we have often found *callous*, and we have open'd *Hydropicks*, where the Liver, Spleen, Kidneys and Meſentery, were very hard, and the Inteſtines much thicker than they were naturally.

The *Scarifications* practis'd by *Aſclepiades*, *Leonidas*, and *Hippocrates*, are of great Uſe, when the Water falls upon the Thighs and Legs; *Aſclepiades* ſpeaks thus, Surgery is more uſeful to Dropſies than

than Medicines, and we have ſeen *Scarifications* made at the internal Ankles, emptied almoſt all the Waters; we muſt ſcarify four Fingers above, of the Depth that we make in Bleeding; preſently flows a little Blood, and then the Water which we ſee to ouſe, without the Danger of an Inflammation. Theſe *Inciſions* don't reunite, till the Waters are all emptied, and the Body diminiſhes in Bulk in a ſmall Time. Theſe *Scarifications* are leſs dangerous, than the Puncture of the Belly; becauſe 'tis eaſier to ſtop the running of the Water in clapping on Cotton upon the Orifice, or in making proper Bandage. When we wou'd make the Waters flow, we muſt undo the Dreſſing and bid the Patients walk, if they can; or we muſt jolt them a little to make the Waters move and flow more readily; *Leonidas* adds, that if the Evacuation from the Ankles be ſmall, we muſt ſcarify the *Scrotum*, the *Prepuce*, the Thighs, and above the *Articulations* of the Hands, to the End that all theſe

ſmall

ſmall Orifices may afford, in the main, a conſiderable Evacuation.

By this it is eaſy to perceive, that the Practice of our Fore-fathers was not diſtant from good Senſe, and that there are abundance of Things, we now do, which we are highly oblig'd to them for.

The moſt celebrated Practitioners of our Times have cur'd many Dropſies by the Means of theſe *Scarifications*, which however are not to be made, but when the Waters have deſcended into the lower Parts, and have fill'd them, to wit, the Thighs, *Scrotum*, and Legs; becauſe we muſt not puncture, but where the Waters lodge; ſome commend *Cauteries*, but Scarifications are much more preferable. We muſt remember, that when the *Scrotum* is loaded with Waters, that the *Seton* is of great uſe.

The Ancients did not make the Puncture of the Belly, without very great Pre-

Precautions; they believ'd, that there were three Sources which furniſhed theſe Waters, and that ſometimes they had but one evident. When it was the Liver, for Example, they made the Puncture on the oppoſite Side; or if it was the Spleen, they made it on the right Side: And when the Inteſtines were the Source, they wou'd have had it made in the middle; that Care ſhou'd be taken not to hurt the internal Parts, and that we were to have ſome Regard for the external. For my Part I underſtand not the ancient Scruples, ſince the Waters, that fill'd the Belly, ſufficiently hinder us from touching the internal Parts; for there is often a Foot's depth. It is true, that in making the Puncture at the Bottom of the Belly, we might pierce the Bladder, and occaſion the Patients Death: For this Reaſon it is, that *Hippocrates* adviſes not to touch the *Hypogaſtrium*, but with Diſcretion. As for the Difficulty, which the Ancients made concerning the external Parts, which we puncture; it is without Reaſon, as well as the Apprehenſion of

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not cutting the Fibres direct. The Orifice is made, obſerving the Bent of the Waters, a little on the Side of the Navel, and of late the *Trocar* was invented for this Operation. The Orifice made is ſo ſmall, that it can hardly be perceiv'd, when the Inſtrument is drawn out: However, when the Waters are become glairy and coagulated, this Inſtrument muſt yield to the Lancet. This Operation is practis'd daily at our Hoſpitals, and I wiſh we cou'd hear, that it ſucceeded better; but ſince People have Recourſe to it as the laſt Remedy, the *Viſcera* are tainted, before they attempt it, and then it can only ſerve to prevent burſting.

If the Breaſt be afflicted with a Dropſy, the ſame Methiod may be follow'd, if the Lungs and the Parts contain'd be ſound.

CHAP. VIII.

Of Hernia's.

HIPPOCRATES takes this Word *Hernia*, for every Tumour againſt Nature in the Belly; but particularly for a Tumour made by the Fall of the Inteſtine, or *Omentum*; there are but two Places in the Belly ſubject to *Hernia*'s, to wit, the *Navel*, and the *Pubes*. Theſe Tumours take the Name from the Parts, where they happen; that of the Navel is called *Exomphalos*; of the Groin, *Bubonocele*, and *Enterocele*, if it falls into the *Scrotum*; or complete *Hernia*, which is a Conſequence of the *Bubonocele*; Women are ſubject to *Bubonocele*'s, but not to complete *Hernia*'s; I ſay then, that all *Hernia*'s take

their Name from the Place where they are, that of the Inteſtines is call'd *Enterocele*; that of the Omentum, *Epiplocele*; if both, 'tis call'd, *Enter-Epiplocle*; if Water, *Hydrocele*; if Wind, *Pneumatocele*; if Fleſh, *Sarcocele*; if the Veſſels, *Cirſocele*, or *Varicocele*.

THE Cauſes of *Hernia*'s, are internal and external; if from an internal Cauſe, 'tis caus'd by Humours, which relax the *Peritonæum*; but the moſt common Occaſion is violent Exerciſe.

THE Operation of the *Bubonocele* is, either of *Election* or *Neceſſity*. It is not common, that a Patient, whoſe Inteſtines or *Omentum* fall and eaſily return, ſeeks for the Operation, for a Bandage ſerves to keep it up very well, ſo that they can go about their uſual Affairs, nay and ſometimes the Truſs cures it. 'Tis only then upon an abſolute Neceſſity, that the Operation is to be perform'd; for Example, when the Inteſtine is ſo much inflated with Wind or harden'd Excrements (in which

which Caſe there is always an Inflammation in the Parts) that it cannot re-enter by the Ring, and that the Patients vomit their Excrements, we muſt endeavour to make the Inteſtine re-enter in handling the Tumour gently, to apply emollient *Cataplaſms*, to place the Patient on his Back, with his Buttocks and Heels higher than his Head. If all this avails not, we muſt then attempt the Operation; however, if the Patient has been a long Time in ſuch a Condition, that there is no Pain in the Tumor, that their Vomiting has ceas'd for ſome Time, and that, in touching the Tumour, the Impreſſion of the Finger continues, as it wou'd do in Paſte; theſe wou'd be infallible Signs of a Gangreen of the Inteſtine, and then the Operation wou'd be uſeleſs.

The Patient being plac'd on his Back, the Surgeon on one Side, and an Aſſiſtant on the other, take up the Skin, making an Inciſion to diſcover the *Peritonæum*; he tears the Membranes with a Fleam, or rather his Nailes; we know we are at

the Inteſtine by the *brown Colour* and *Circular Fibres*, and that it *obeys eaſier* than the Purſe of the *Scrotum*. It often happens that the Inteſtine adheres; this is the Reaſon, why it is better to leave ſome Pellicules of the *Peritonæum* ſticking to the Gut, than to take 'em away; the Inſtine being free and diſengag'd, we muſt put it into ſuch a Condition, that it may be thruſt into the Cavity; but the Ring oftentimes is ſo ſtraitned, that we cannot do this, till it is dilated.

To dilate the Ring, we introduce a channel'd Probe, as we ſaid in a Wound of the Belly, doing it in ſuch a Manner as not to engage the Inteſtine; but the Ring and Inteſtine are ſometimes ſo cloſe, that it is almoſt impoſſible to make the Probe enter; we muſt then take hold of the Inteſtine with the right Hand, and upon it gently glide the Fore-finger of the left; then take a Biſtory in the right, and run it upon the Nail, making a ſmall Scarification on the Ring, to facilitate the Entry of the Probe into the Cavity. We

run

run into the Channel of this Probe a Biſtory to cut the Ring, whoſe Extent is about the *6th* Part of an Inch; if we paſs beyond this, we cut a Branch of an Artery, which waters the *Aponeuroſis* of this Muſcle, which we muſt ſhun. The Dilatation is made by drawing to you the Inſtrument without cutting the Teguments, ſince it is the inner Part which makes the ſtrangling; then we muſt return the Inteſtine, as we have ſaid, and ſcarify the Ring all round, in Order to make a ſtrong *Cicatrix*. We put into the Wound a Tent or Plug, dipt in the *Yolk* of an Egg, fill it with Doſſils, and uſe Compreſſes and Bandages.

N. B. A late Practice is intoduced in this Diſeaſe; Phyſick is given, and if the Inteſtine be replac'd, a *Cauſtick* is laid upon the Ring of the Proceſs, and then cur'd as an Ulcer; this *Citatrix* being hard yeilds *no* more to the *Procidentia*.

We have ſaid, that an *Enterocele* was the Conſequence of a *Bubonocele*; we call it

it *Epiplocele*, when it is the *Omentum*, and *Enter-epiplo-cele* when the Inteſtine and *Omentum* are both engag'd.

THIS Operation is made, either by taking away the Teſticle, or leaving it on: The firſt is call'd *Caſtration*; the other which leaves it, is perform'd two Ways, either by cutting the ſpermatick Veſſels, or leaving them behind. But theſe Methods were only practis'd by the Ancients, and are now not in uſe.

THIS Operation of the *Enterocele* differs in nothing almoſt from the Operation of the *Bubonocele*, for we place the Patient in the ſame Situation, we make the Inciſion the whole Length of the *Scrotum* to diſcover the Dilatation, and we endeavour to replace the Parts into the Cavity of the *Abdomen*; but as it is always a Caſe of Neceſſity, when the Operation is perform'd, ſo in that Caſe, the Inteſtines can't be replac'd; ſo that we are oblig'd to dilate the Ring in the ſame Manner as has been ſaid in the *Bubonocele*,

bonocele, the Remainder of the Dilatation rots in Suppuration. In proceſs of Time the Inteſtine often faſtens to the Teſticle; if we were neceſſitated to perform the Operation, in this Caſe we wou'd be oblig'd to caſtrate the Patient, in ſeparating it from the Inteſtine. *Laſtly*, When the Gut does not re-enter into the *Abdomen*, and in managing the Tumour, we perceive an Adheſion, it is a certain Sign, that it is fix'd to the Teſticle; then it is the ſafeſt Way to *poſtpone* the Operation.

We muſt never *Caſtrate*, without an abſolute Neceſſity, that is, but where there is Danger of Death without it.

A *Sarcocele*, and a mortified *Teſticle*, obliges us to caſtrate; we make an Inciſion upon the *Scrotum*, to make the Teſticle appear at the Orifice, we tye the Veſſels and their *Integuments*, however, without tying them too ſtrait, for fear of *Convulſions*, and we cut an Inch below the Ligature.

It muſt be obſerv'd, that when the *Omentum* is fal'n into the *Scrotum*, as it often happens, we muſt not endeavour to replace it into the Belly, as the Ancients us'd to do, ſince it would be an uſeleſs Load; for in all old *Hernia*'s the *Omentum* is much more bulky, than in its natural State; for this Reaſon we ought to cut away all that Part of it, which is fal'n into the *Scrotum*, and make a Ligature as near the *Ring* as poſſible. If the Inteſtine, the Veſſels, and *Omentum*, ſhou'd adhere together, it is better to leave ſome ſmall Portion of the *Omentum* on the Inteſtine, than to venture to take it forcibly away; for this wou'd fall off in Suppuration.

It is neceſſary to obſerve, that to facilitate the *Reduction* of the Inteſtine fal'n into the *Scrotum*, or Groin, we muſt not neglect to apply emollient *Cataplaſms* upon the Tumour, to give *Gliſters* to the Patient, to endeavour to irritate the Inteſtines, to make him lie upon a Bed, to put

put a Pillow under his Buttocks, the Surgeon paſſing one of his Hands between the Thighs of the Patient, and with the other managing the Tumour gently, in endeavouring to diſſolve the Fæces, in order to replace the *Inteſtine*. Dexterity in a Surgeon is the main Point in a Diſeaſe of this Conſequence, where the Patient vomits up his Excrements, and *Death* ſo often puts an End to the Tragedy.

CHAP. IX.

Of the Hydrocele.

WATER diſtending the *Scrotum*, is call'd an *Hydrocele*, or particular *Dropſy*, it is often the Conſequence of an *Aſcites*; it is almoſt always on both Sides; the more dangerous is that, which is within the proper Membrane of the *Teſticle*, (call'd the *Albuginea*)

WHEN the Water is in a ſmall Quantity, in a young Perſon, and that it is not occaſion'd by an *Aſcites*, the general and particular Remedies often cure it, ſuch are *Purgatives*, *Aſtringents*, *Sponge* dipt in *Lime-water*, and Things of this Nature.

ture. In ſhort, when theſe Remedies fail, we muſt have recourſe to the Operation.

THE Waters are emptied either with a *Lancet*, a *Seton*, a *Cautery*, or the *Trocar*. The *Cautery* is often the moſt uſeful, becauſe it conſumes the Waters; when we perform the Operation with *Cauteries*, we apply a Train of *Cauſticks* to the Part where we have a Mind to make the Inciſions; we cut the Eſchar with a *Lancet*, and we even may apply more, if Occaſion be, without Fear of hurting the Parts, becauſe the Water hinders their Activity; often in old *Hydrocele*'s it is a *Cyſtis*, that contains the Waters, which obliges us to fill the Wound with Doſſils, dreſs'd with ſuch Medicines as will corrode this *Cyſtis*.

THE *Hydrocele* being on both Sides, we paſs a *Seton* a-croſs the *Scrotum*, very near the Root of the Yard, to the End the Water may run more eaſily.

THE *Lancet* is of uſe for ſmall *Hydrocele*'s, and for Infants where the Water is to be drawn off all at once; for as to others, where the Water is in abundance, the Wound cloſes in an inſtant, by reaſon of the wrinkling of the *Scrotum*; in a Word, it is always ſafeſt to truſt to the *Trocar*.

THE Signs of an *Hydrocele* are ſelf-evident; the Water makes a conſiderable Thickneſs, the Wrinkles are effac'd, we feel a *Fluctuation* of Water. In putting the Hand on one Side, and a Candle on the other, there is a Tranſparency, thro' which you may ſee the Teſticles in the middle of the Water, and the Weight is conſiderable.

THE *varicous Hernia*'s are call'd *Circſocele*, or *Varicocele*; both which ſignify Veſſels dilated and twiſted: Theſe Veſſels are the *Spermaticks*, which are become *varicous*; theſe Diſeaſes are not cured, but by *Caſtration*.

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An *Excreſcence* of Fleſh in the Teſticles, is call'd *Sarcocele*; they are ſometimes without Pain, but often partake of the Nature of a *Cancer*, and are exquiſitly painful. *Topicks* avail little againſt this Diſeaſe, nothing can make a perfect Cure, ſave the *Caſtration*; however, this muſt never be attempted, but when Neceſſity requires it.

The Ancients made a great many Operations on the *Penis*. They, who have read *Celſus*, may ſee a great many pleaſant ones; as to ring the Prepuce in young Boys, in Order to preſerve their Voice; to pierce the Glans of a Child when newly born, or otherwiſe to rectify the Orifice, when it is not in the middle.

The *Circumciſion* is an Operation deſcribed by the Ancients; they drew the Skin of the Yard on high, they made a Ligature there, and then around the *Penis* they made an Inciſion, which they fill'd with Doſſils to cicatrize it. It is eaſy

eaſy to perceive, that this was an artificial Prepuce, which they made; but as *Circumciſion* is not now practis'd among *Chriſtians*, we have ſaid enough of it in this Place.

THE other ſmall Operations, ſuch as ſeparating the Prepuce from the Glans in an Adheſion, or ſuch as taking off *Warts* or *Shankers*, are too eaſy to be inſerted.

THE Operations which are perform'd in Women, are the Extirpation of the Nymphæ, and of a Sarcoſis, or Shankers, which are made by Inciſion or Ligature.

THERE is ſometimes a Membrane at the Orifice of the *Vulva*, call'd *Hymen*; we make a *longitudinal* Inciſion, and we hinder it from reuniting. We have ſeen the Lips of the Neck of the Womb quite clos'd up; this Diſeaſe happens from the firſt Conformation, and often after Shankers. A diſcreet Surgeon needs no Directions in this Affair.

CHAP. X.

CHAP. X.

Of a Phimosis and Paraphimosis.

THE Prepuce is subject to a *Phimosis*, and a *Paraphimosis*; the first is such a Straitness of the Prepuce, that the Glans cannot be made to appear; it is either natural, or it happens by Reason of an Inflammation, an Ulcer, or Shankers.

To perform the Operation of the *Phimosis*, the Surgeon draws the Extremity of the Prepuce towards him, an Assistant ought to draw the Skin at the Root of the *Penis*, to the End that the Incision be at the Bottom of the Glans; he introduces a small Instrument in the Shape of a Penknife, cutting the Skin to the *Root*, and then draws it back.

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THE *Paraphimoſis* is a Diſeaſe oppoſit to the former, the Prepuce is ſo ſtrongly turn'd behind the Glans, that it can't be drawn to cover it; and ſometimes it happens, that the *Inflammation* and *Strangulation* are ſo great, that there is great Difficulty to make it return. We then apply aſtringent Medicines and cold Water; but if theſe Means proves uſeleſs, we muſt make Inciſions all round, in Order to hinder the Stangulation, and then endeavour to reduce it.

THE Words are deriv'd from the *Greek*; to wit, from φιμὸς, *camus*, a *Bitt*; inaſmuch as the Parts were bridled and curb'd.

CHAP. XI.

Of a Stone in the Urethra.

A SMALL Stone often glides into the *Urethra*, from the Bladder, it blocks up the Paſſage, when once it has enter'd it; we muſt endeavour to make it come forth by preſſing the *Penis* with the Hands; or, if we can, by the Extremity of the Glans with a proper Inſtrument. There is no Danger in making an Inciſion at the Glans, if it can't paſs. We take the *Penis* between our Thumb and Forefinger, we we make an Inciſion upon the *Stone* at the Side of the *Raphe*, and we-

preſs with the Fingers, to make it come forth. It is neceſſary to obſerve, that we muſt, before we make the Inciſion, draw back the Skin of the *Penis*, as high as we can, to the End that this Skin may cover the Orifice, when 'tis drawn over again.

CHAP. XII.

CHAP. XII.

Of Lithotomy.

THERE are many Signs of a *Stone in the Bladder*, the Patients feel a ſharp Pain there, becauſe the *Stone* preſſes upon the Fibres. The Urine is made Drop by Drop, which we call a *Strangury*; and in making it, there is often a full ſtop put to it, becauſe the *Stone* blocks up the Paſſage from Time to Time; and often the Urine is bloody.

THE *Inflammation of the Bladder*, extends it ſelf always ſo far as the Glans, becauſe of the Continuity of the *Bladder*, the *Urethra*, and It.

In Perſons troubled with the *Gravel*, the Urine is whitiſh, becauſe there is ſome of it which always remains in the *Bladder*, and which cannot all be emptied, by Reaſon of the *Stone*: We ſee that this Urine if it ſtand a little Time, ferments, and becomes ſtinking.

The *Priapiſm*, or *Involuntary Erection of the Penis*, is caus'd by the *Inflammation of the Bladder*, which communicates it ſelf to the Yard. The Itching of the *Glans* proceeds from the *Acrimony* of the Urine, and it is this *Itching* which makes the Patients always hold their Hands there; all theſe Signs are ſometimes equivocal, and ſometimes univocal; tho' Diſeaſes of the *Bladder*, often have the ſame Signs, wherefore the *Catheter* is the ſureſt *Informer*.

The *Stone* may cling to the Bottom of the *Bladder*, without much incommoding the Patient, and thus Perſons may live free from Pain, and all the fatiguing Symtoms

toms of it. *Van Helmont* ſays, that he knew a Prieſt, who endeavouring to reach a Book in his Study, felt all on a ſudden a Weight in his *Bladder*, after which he had all the *Symptoms* of a *Stone*, which oblig'd him to have Recourſe to the Operation.

To ſearch whether a Patient is troubled with the *Stone*, we take hold of the *Penis* with the left Hand, and preſs the Paſſage a little, then with the right Hand we introduce the *Catheter*, the End of which muſt be on the Inſide, and its convex Part towards the Belly; whilſt we paſs it up gently we muſt draw the *Penis* upwards, to the End we may make the Paſſage ſtreighter, and turn the Hand and the End of the *Catheter* towards the Belly, to make it enter into the Bladder under the *Os Pubis*, then draw back the *Stilet* of the *Catheter* to give Paſſage for the Urine.

THERE is another Method of Probing; we turn the *Penis* and the two Ends of the

Ca-

Catheter towards the Belly, and its convex Part downwards, to introduce it directly into the *Bladder*, without giving any Turn to the *Catheter*. This Method is much easier than the former, and the Patient may search himself. The Resistance the *Stone* makes to the *Catheter*, is an evident Sign of a *Stone*.

The Patient being in a convenient Posture, laid upon his Back on a Couch, or upon a Table made for this use, his Thighs and Legs bent and separated by Assistants and Ligatures, we introduce a a *Catheter*, which is channel'd, into the *Bladder*, an Assistant holds the *Catheter*, and the Patient's *Cods* up towards his Belly, and we do it in such a Manner, that the Convex Part of the *Catheter* pushes the *Perinæum* outwards.

The Surgeon, putting two Fingers of the left Hand at the Side of the *Catheter*, makes a sufficient Incision upon the *Gutter*, on the *Raphe*, with a streight *Bistory*,

ry, large enough, cutting on both Sides; ſome put the Nail of the Fore-finger into the *Gutter* of the *Catheter*, or elſe before they withdraw the *Biſtory*, they glide above it an *Introductor*, and then withdrawing the *Catheter*, we thruſt in crooked or ſtreight *Forceps*, upon the Hollow of the *Introductor*, we find the *Stone*, and catch hold of it with the *Forceps*, and draw it from Side to Side, in Order to extract it.

We introduce a *Scoop* into the *Bladder*, in order to draw forth the Grumes of Blood, and alſo ſome Shivers of the *Stone*; it is not neceſſary to put a *Cannula* into the Wound.

We dreſs the Wound with *Pledgets*, a *Plaſter*, and proper *Bandages*; we bind the Thighs of the Patient cloſe with the *Garter*: This Operation requires Practice, which is beſt ſeen in the *Hoſpitals*, where they make it their daily Exerciſe.

Of

Of late, *Peter Franco*'s Method is introduc'd, with ſome little Variety of Circumſtances by Mr. *John Douglaſs*, a *Scotch* Surgeon, and is now practis'd in our Hoſpitals, but 'tis ſaid, with little Succeſs; they inject warm *Barley-water* into the *Bladder*, ſo as to fill it full; then they make an Inciſion on the Side of the *Linea alba* large enough, and pierce the *Bladder* as near the Adheſion of it, to the *Os Pubis* as poſſible, and extract the *Stone* thro' this *Aperture*; and then they Cure the Wound as uſual. It has not ſucceeded too well yet, and is in no fair Way to be advanc'd into common Practice; we muſt then wait.

Women are ſubject to a Suppreſſion of Urine, and to the Stone, but ſeldomer than Men, by Reaſon of the Urine's ſhorter ſtay in the *Bladder*; it is eaſier, and oftener voided than in Men, by Reaſon of the Situation of the *Bladder*, the Largeneſs of the *Urethra*, the ſmall Diſtance from its *Exit*, and its *Direction*.

To

To ſearch Women, or cauſe them to urine, we muſt put the Patient in the ſame Poſture as we have ſaid above, concerning the Men, and with the left Hand open the *Nymphæ*, to diſcover the *Urethra*, which is above them, we introduce at the ſame Time with the Right, a *Catheter*.

The *Catheter* for Women is a little crooked at the End; we draw out the *Stilet* to let the Urine flow, we introduce a *Dilatator* into the *Bladder* in Order to thruſt in the *Forceps*; *Laſtly*, we ſearch for the *Stone* and take hold of it, as we have ſaid; if it be too large, we give a ſmall Snip to the *Urethra* to facilitate its Extraction.

CHAP. XIII.

Of the Fiſtula in Ano.

A *FISTULA* in general, is a deep and cavernous Ulcer, having a Hardneſs on the Inſide, which affords *Pus*. The Differences of *Fiſtula*'s are taken from the Parts, where they are ſeated, from their Figure, and Accidents which accompany them; ſome are in the Fleſh, others reach to the Bones, the Veins, Arteries, or the Nerves; ſome are ſtreight, and others *oblique*, with many *Sinus*'s.

THE Cauſe of *Fiſtula*'s, is always a *ſinuous Ulcer*; for every one knows, that every

every *Fiſtula* is preceeded by a purulent Matter, which proceeds from a cavernous Ulcer. The *Sanies* which runs from old Ulcers, is acrimonious, ſharp, and like unto Brine. We generally obſerve, that whenever any of the Parts are a long while ſoak'd in an acrimonious Matter, for Example, in an *Aſcites*, we ſee ſuch an Ulcer becomes hard and callous; from whence it may be ſaid, that acrimonious Matter is the true Cauſe of the *Calloſity* of *Fiſtula's*.

THE *Diagnoſtick* Signs of *Fiſtula's* are drawn either from their *Sinus's*, or Accidents, which ſucceed. When a *Fiſtula* is in the fleſhy Parts, the Matter which runs is groſs, viſcous, and muddy. When it is among the tendinous and nervous Parts, the Matter is *ſerous* and attended with very violent Pain. If the Matter reſemble the *Lees* of *Wine*, 'tis a Sign of the *Fiſtula's* being near the *Blood-Veſſels*: If on the contrary, the Matter be clear and thin, it is a certain Sign of its being at the Bone. Upon this,

I ſhall mention *Hippocrates*'s Sentiments, who ſays, that if *Fiſtula*'s are near the Bone, for near a Year together, it is odds but the Bones are alter'd or carious.

For the *Prognoſtick* of *Fiſtula's*, we may ſay, that recent ſimple ones, and ſuch as are ſeated in the fleſhy Parts, and in a young Body are eaſy to be cur'd; But on the other Hand inveterate *Fiſtula's*, in *Cacochymical Bodies*, and near the principal Parts, which reach to the *Tendons*, the *Bones*, the *Arteries*, the *Vertebræ*, the *Thorax*, the *Abdomen*, the *Bladder*, the *Inteſtines*, the *Breaſts*, the *Armpits*, or the *Groins*, are certainly difficult to be cur'd.

The Cure of *Fiſtula's* is Palliative, or Eradicative. *Palliative*, as to thoſe old *Fiſtula's*, which are near the principal Parts and in Places, where we can neither apply *Medicines*, nor *Cauteries*: This Cure then conſiſts in evacuating the Humours, in obſerving a proper and convenient *Diet*, in *Bleeding* from Time to

Time

Time, whether in the *Arm*, or in the *Hæmorrhoidal Veins*. The *Eradicative* Cure, is such as takes away the *Callosity*; it is made by acrimonious *Medicines*, such as *Tochisci vigonis*, thrust in; but the surest is an actual *Cautery*. We shall at present confine our selves to a *Fistula in Ano*.

A *Fistula in Ano*, has always many *Sinus*'s, which make a *Sac*. These *Fistula's* have sometimes two Orifices, the one opens into the Intestine, and the other on the outside of the *Anus*. There are some which have but one; they are call'd internal, when they open into the Intestine.

These *Fistula's* are known by the Pain, and the Matter which comes forth with the *Excrements*, or else by the Help of a Probe; they are more difficult to be discovered, when they pierce the Intestine. The Orifice is sometimes so high, that we have a Difficulty to find it with our Fore-finger thrust into the *Anus*, turning it round the Intestine. We feel often a small

ſmall Inequality, and that is properly the Orifice of the *Fiſtula*; for the Orifice of all *Fiſtula's* is unequal, in the Shape of a little *Caruncle*.

THERE are *Fiſtula's* which reach to the *Bladder*, or the *Os coccygis*, or to the *Os ilij*, in Bodies of an ill Habit; but the Operation is of no Effect in ſuch *Fiſtula's*.

THE *Fiſtula's in Ano* are of four Sorts, the one is call'd, *The internal blind Fiſtula*; another the *external blind one*; a third, the *complete Fiſtula*; the fourth, *The Coney-burrow*.

The blind internal Fiſtula, is open on the outſide, and has no Orifice into the *Rectum*.

THE *blind External*, is open towards the Inteſtine, and that on the outſide.

THE *Complete*, is open towards the *Anus*, and into the Inteſtine alſo.

The

The Coney-burrow, has many *Sinus*'s.

THE Patient being laid with his Belly upon the Edge of a Bed, with his Legs far asunder, the Surgeon, after finding the Nature of the *Fistula*, has no more to do but to fall to the Operation.

THE Manner of performing this Operation is always the same, we must open the *Sinus* to the Bottom of the Fistula. For Example, in the *blind external* one, we pass a Probe into the Intestine, endeavouring to find out the Orifice; the Probe being within, we push it gently to the Bottom: We apply the Fingers about the *Anus* to feel the End of it; but the Matter is often diffus'd so deep into the Flesh, that it is hard to feel the Probe; upon which Account we must make a small Incision upon the *Teguments*, at the Part where the Probe is, which we push thro' the Orifice, to make a Sort of Handle of, and we cut with the *Scissers*, all that this Handle contains.

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THE *blind Internal* is open outwardly; for which Reaſon it is more eaſy to introduce a Probe into it, and often the Matter has almoſt worn out the Inteſtine. We paſs our Finger into the *Anus*, we puſh the Probe upon the Finger to pierce the Inteſtine, and then we draw it back to make a Handle of, and cut as is ſaid above.

THIS Operation may be perform'd with an *Inſtrument* in the Shape of a *Biſtory*, whoſe End is like a Probe; we paſs it into the Orifice of the *Fiſtula*, and drawing it towards us, we cut it to the Bottom.

WHEN we uſe ſuch an *Inſtrument*, the Operation is ſooner done, and the Patient ſuffers not near ſo much; for with the Sciſſers it is not eaſy to cut all of it at once. Having diſcover'd the Bottom of the *Fiſtula*, we muſt always cut the Adhæſions; but firſt we muſt feel with the Finger, that there be no *Artery* or *Vein*, for the *Artery* is what we muſt avoid; the Pulſation diſcovers it.

THE

THE Ancients ſaid, that we were not to perform the Operation in *Fiſtula's*, which paſs'd beyond the *Sphincter* of the *Anus*, leaſt we ſhou'd occaſion an involuntary Efflux of the *Fæces*; we in this Age are not ſo ſcrupulous, we daily attempt the Operation of *Fiſtula's*, which paſs beyond it, without any ill Conſequence, becauſe Fibres cloſing themſelves at the Point of the *Cicatrix*, don't loſe their Spring, nor their Action, or Function of opening and ſhutting. However, if the *Suppuration* were tedious, and there ſhou'd be a conſiderable Efflux; then indeed, there wou'd be Danger of a conſtant involuntary Flux of them. We put into the Bottom of the Wound *Doſſils* with Strings ty'd to them, we fill it with *Pledgits* dipt in *Balſamicks*, and cover with a *Plaſter*, *Compreſſes*, and the *T Bandage*.

CHAP. XIV.

Of the Empyema.

THIS Word is taken, either for the Diſeaſe, or the Operation; it is us'd in *Hippocrates*, for a Collection of Matter in any Place whatever, and indeed it denotes no more than πύον ἐν, or *Matter in* ſome Place, to be determined by the ſucceeding Word.

BY an *Empyema* then, we underſtand a Collection of Matter in the *Capacity* of the *Thorax*.

THE Signs of Matter diſtending the *Thorax* are a Weight upon the *Diaphragm*, and a *Fluctuation* of *Matter*.

THE

THE Signs which demonſtrate, that this Diſeaſe is fix'd on the Lungs, are a Weight, a fix'd and dull Pain, with a Difficulty of Breathing.

IF the Wound penetrate into the Breaſt, we know it by the Probe, and the Noiſe the Air makes in coming out at it; and if the Lungs are prejudic'd, the Air comes forth at the Wound, but with leſs Noiſe, and the Patient ſpits Blood. An * *Emphyſema*, which is a bloated *Swelling* quite round the Part, often happens to Wounds in the Breaſt. This Symptom is like what is cuſtomary with *Butchers*, who blow up their *Meat* to make it appear well.

ALL the World knows, that Inſpiration is the Entry of the Air into the Lungs; and Expiration its Paſſage out again; and

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* From ἐν, and φυσάω, or φυσιόω, *inflo*, to blow in.

that Reſpiration includes both. When it enters the Lungs, the *Thorax* enlarges by the Action of the *Muſculi intercoſtales* and *Diaphragm*; and when the Air returns in Expiration, it deſcends and grows leſs; which happens from the Spring of the *Cartilages* of the *Ribs* and *Sternum*, and alſo by the *Weight* of the *Thorax* it ſelf.

In Inſpiration the *Diameter* of the Breaſt enlarging, there is a Neceſſity that the Air ſhould enter by the Noſe and Mouth, which at the Top of the *Larynx*, make but one common *Duct*; and when it returns, it muſt paſs out again by the *Compreſſion* the *Lungs* receive, as well from the *Breaſt* as the *Spring* of the *Veſiculæ* which compoſe it. Thus is it eaſy to comprehend, that the *Breaſt* repreſents a Pair of *Bellows*; the *Ribs* are the *Boards*; the *Capacity*, the *Hollow* on the Inſide; the *Mouth* and *Noſtrils*, the *Noſe* of them; the *Epiglottis*, the *Flap*; and *laſtly*, the *Muſcles* do the Office of the *Hanas*, which open and ſhut the *Bellows*.

When

When the *Intercoſtal Muſcles* act, the Breaſt enlarges, as we have ſaid; and when this Action ceaſes, it returns to its ordinary State: In like Manner alſo, when we draw the *Wings* of the *Bellows* up; the Air, which is all round, being compreſs'd by the opening of them, makes a Circle and fills it up, that is, it runs to that Place where there is leaſt Reſiſtance; but when we ceaſe to act, the *Wings* of the *Bellows* fall by their proper Weight, and thruſt out the *Air*; and this is a ſuccinct *Idea* of *Reſpiration*.

We have ſaid, that the Probe was the moſt certain Sign we had, for the Diſcovery of a penetrating Wound in the Breaſt, and that when the *Lungs* were hurt, the Air comes out at the Orifice; but if we wou'd reflect a little on what happens in *Reſpiration*, we ſhall find that in penetrating Wounds, the Air ought always to come forth at the Orifice, when the *Thorax* contracts it ſelf, and enter it, when it dilates: And alſo

the

the Noiſe which the Air makes in coming out at the Orifice, confirms us in our Aſſertion.

When the Wound penetrates into the very Lungs, the Blood which iſſues forth is frothy, and the Air makes not ſo great a Noiſe.

We muſt obſerve again, that when the Breaſt is wounded on both Sides, we muſt always dreſs the Wounds, the one after the other; and it is a *Maxim* which muſt be ſtrictly follow'd; becauſe, if we ſhould leave them both open at one and the ſame Time, the Patient muſt run the Riſque of *Suffocation*; and the Reaſon is very evident, if we conſider that no Air enters by the Mouth, and that whatever does enter by the Breaſt, muſt paſs by the Orifices on each Side, and ſo compreſs the Lungs, and hinder the Breaſt to play.

To ſearch a Wound, and know its Direction, we muſt place the Patient in the *Poſture* he was in when he receiv'd the Wound,

Wound, and obſerve the ſame Rule in Order to make the *Matter* flow out; *Laſtly*, to evacuate the *Blood* or *Matter*, we muſt have recourſe to the Operation.

THE Place of the *Operation* is either of Neceſſity or Election; the Place of Neceſſity, is where the *Matter* preſents it ſelf; the Place of Election is uſually between the ſecond and third true Rib, counting from below upwards, four Fingers from the lower Angle of the *Omoplata*, or *Scapula*, and four Fingers from the *Spina Dorſi*; if the Patient has been ſubject to a *Pleuriſy*, we muſt make the Orifice a little higher, for fear of wounding the *Diaphragm*, which may have adher'd to the *Ribs* of the Patient. We cauſe an Aſſiſtant to hold the Patient, plac'd upon a Bed, the Place being mark'd, we take up the Skin and cut it acroſs with a *Biſtory*, we make a *longitudinal Inciſion* of the *Teguments*, and we cut the Fibres of the great *dorſal Muſcle* tranſverſly, for fear it ſhou'd make an Obſtacle at the Orifice, which we are to make

make in the *Intercoſtals*; we pierce the *Pleura* in conducting the Point of the *Biſtory* with our Fore-finger; if it be *Blood*, we muſt draw off a good deal; but if it be *Matter*, leſs. The Ancients have always commanded to avoid the *intercoſtal* Veſſels, which are within the Fiſſure of the inferior Part of the Rib; altho' theſe Veſſels are ſcarce ſeen, but at the upper Side of the Ribs; for a little after they are loſt in the *intercoſtal Muſcles*, and even when we do cut them, the Inconvenience is not very great, becauſe theſe Veſſels are not ſo large, as to make us apprehend any great Effuſion of *Blood*, ſince they can't afford much.

The Orifice being made, we paſs our Finger into the Breaſt, and we turn it all round, in Order to diſentangle the *Adheſions*, if there be any, to the End the *Matter* may flow out eaſily. After having drawn enough, we put a *Sponge-Tent* in, to which a *Thread* is ty'd, we dreſs up with *Doſſils*, and apply over all a

Pla-

Plaſter, *Compreſſes*, the *Napkin* and *Scapular*.

If the *Matter* ſhould grow thick, we muſt make *Injections*, with Diſcretion, into the Cavity. We know that the *Abſceſs* which is form'd in the *Pleura*, is emptied, and that the *Matter* is fal'n into the *Cavity* of the *Thorax*, when the *Fever*, the *Pain*, and all the other *Symptoms* begin afreſh; and moreover we hear a *Fluctuation*, as we have already ſaid.

CHAP. XV.

Of a Cancer.

THE *Cancer* is a hard and painful *Tumour*, of a livid and leaden Colour, which uſually attacks the exterior *Glands*, and corrodes the *Membranes* and Fleſh. They who feed upon ſpirituous *Aliments*, are more ſubject to it than others; as Women to whom it often happens in their Breaſts. This Diſeaſe is ſo much the more troubleſome, as its Cure is the moſt difficult of all *Tumours*; ſome however have been cur'd by the *Extirpation* of the Breaſt; but altho' it be rarely cur'd, we ſhall give you the Manner of performing the Operation.

WE

We paſs a threaded Needle a-croſs the Breaſt, to make a *Handle* of; then drawing the Breaſt up by this Handle, and with a very ſharp Knife we cut quite round cloſe to the Ribs; then we preſs the Parts ſo cut with our Hands, to make the *Blood*, which has been coagulated there, to flow forth, you tye the *Veſſels*, and dreſs with *Aſtringents*, and *Oil of Turpentine*, over which you lay *Compreſſes*, the *Napkin*, and *Scapular*.

CHAP. XVI.

Of the Aneuriſm.

AN *Aneuriſm* is a Diviſion of the *Artery*; it is made by *Ruption* and *Dilatation*; wherefore there are two Sorts of *Aneuriſm*'s, to wit, a true and a falſe one. The true, is when the Membrane is cut, and that the *Interior* comes out at the *Orifice*, dilating it ſelf inſenſibly by the Impulſe of the *Blood*, from whence a *Sac* is form'd, which increaſes in ſuch *Proportions*, as the *Blood* ingages it ſelf in it.

THE ſpurious *Aneuriſm*, is when the *Artery* being quite open, the *Blood* eſcapes

capes among the Muſcles and Teguments, and makes a *Tumour*, which is often hard; Theſe two Sorts of *Aneuriſms* may be cur'd in the Beginning with *Aſtringents* and *Bandage*.

The Cauſes of the *Aneuriſm* by Dilatation are internal and external; the internal ariſes from the Impulſe of the *Blood*, which beating againſt the Walls of the *Artery*, dilates the *Membrane* into the Shape of a *Pouch*, as we have ſaid, becauſe it is more thin in that Place.

The external Cauſe happens from a *Fall*, which has weakned the *Artery*, or elſe by its opening, when we bleed.

We know a true *Aneuriſm* by its *Pulſation*, and its *Softneſs*: In preſſing the *Tumour* the *Blood* re-enters the *Artery*, and as ſoon as we withdraw the Finger, the *Blood* fills up the Part as at firſt; the the Colour of the Skin is hardly chang'd.

The

THE ſpurious *Aneuriſm* has quite contrary Signs, which are *Hardneſs* and *Firmneſs*; the Skin is livid, and there is no *Pulſation*.

WHEN a Surgeon perceives, that an *Artery* is open'd inſtead of a *Vein*, he muſt let the *Blood* run to a good Quantity in Order to prevent an *Inflammation*, and too great an *Agitation*; then encloſe a *Farthing* in a *Compreſs*, and apply it over the Orifice, or otherwiſe a great many ſmall *pyramidal Compreſſes* of different Sizes, in Order to compreſs the *Artery* and take care not to tye the *Ligature* too ſtrait. We don't perform the Operation in large *Aneuriſms*, ſuch as thoſe at the Armpits, or the Belly, we content our ſelves with *Aſtringents* in ſuch Caſes; we ſhall here inſert the Manner of performing it in the Arm.

THE Patient being in a proper Situation, the Aſſiſtant takes hold of the *Artery*, the ſureſt Way is to uſe the *Torniket*.

ket. We open the *Tumour* with a *Lancet*, like an Abſceſs, beginning at the Bottom and ending at the Top; The *Tumour* being open, we diſcharge the *Blood*, we ſeparate the Nerve from the Artery, we paſs under the Artery a crooked Needle, threaded with a double *Thread* wax'd, we cut the *Thread* long enough, and we make two *Ligatures* (one below the *Tumour*, the other above,) becauſe the lateral *Branches* always afford *Blood*. Some cut the Artery between the two *Ligatures*, but it is ſafer not to do it, for the Security of the *Ligatures*, we dreſs the Wound with *Doſſils*, a *Plaſter*, *Compreſſes*, and Bandage.

CHAP. XVII.

CHAP. XVII.

Of the Trepan and Fractures of the Skull.

IN Wounds of the *Head*, three Parts may be prejudic'd; the *Cranium*, the *Dura Mater*, and the *Substance* of the Brain.

THE *Cranium* may be fractur'd two Ways, by *Incision* and *Contusion*.

Hippocrates makes five Sorts of *Fractures*, a *Fissure*, a *Contusion*, an *Incision*, a *Depression*, and a *Contra-fissure*.

Guido reduces them to two Sorts, proper and common, which are drawn from the Nature of the Wound, its *Size*, its *Shape*,

Shape, and its *Situation*. They happen alſo in different Places of the *Cranium*, either in the firſt Table, or the ſecond, or both. They are ſtreight, oblique, ſimple, and Compound. The proper are a *Contuſion*, *Depreſſion*, and *Inciſion*, which laſt is of three Sorts, to wit, † *Encope*, * *Diacope*, and [*] *Aposkeparmiſmos*.

Encope (Ἐγκοπὴ) is an Inciſion, which divides the Bone without carrying off any Part of it, but only leaving a Mark; *Hippocrates* calls it *Hedra* (ἕδρα) the *Latins Veſtigium*, or *Sedes*, a Mark or Seat. *Diacope* (Διακοπὴ) is a deep Inciſion which cuts the Bone, without cutting off the Piece. *Laſtly*, *Aposkeparmiſmos*, (Ἀπόσκεπαρνισμὸς) is an Inciſion, which carries off a Piece of the Bone, 'tis call'd in *Latin*, *Dedolatio*.

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† Ἐγκοπη } both a κόπτω, *Scindo*, to cut.
*Διακοπὴ }

[*] Ἀπὸ & σκέπαρνον, *Aſcia*, a Hatchet.

A ſharp Inſtrument then cannot hurt the Brain, but in the following Manners; perpendicularly without carrying off the Piece, and only leaving a Mark behind; *obliquely*, the Inciſion dividing the Bone without the Piece off, and parallel to the Head, the Inciſion carrying off a Piece of Bone. We owe the *Greek* Expreſſions to the firſt Maſter's of the Art of *Phyſick*.

Fractures made by *Inſtruments* contuſing the Bone, are much more perplex'd than the firſt.

A Contuſion is twofold; the firſt does not deſtroy the Continuity of the Bone, we name it * *Thlaſis* (θλᾶσις) it is a Depreſſion of the Bone, without its being ſplit; this Species of *Fracture* happens to *Children*, nevertheleſs it is difficult for a Bone to be depreſs'd without a *Fiſſure*.

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* Α θλάω *tundo*.

This

This Depreſſion is like to what happens to a *Tin-Pot*; we ſometimes obſerve, that it riſes of it ſelf, by the Spring, the Bone has.

A Contuſion which deſtroys the *Continuity* of the Bone is twofold: In the firſt, the Bones continue equal and contiguous; it is but a ſimple *Fiſſure*, call'd * *Rogme* (Ῥωγμὴ) it reaches further than the Inſtrument that made it. When the Fiſſure is apparent, it is call'd *Rogme*; but if it is occult, 'tis call'd † *Trichiſmos* (Τριχισμὸς) or a *capillary* Fiſſure.

All theſe Fractures happen either to the Part receiving the Blow, or to its oppoſite Side; which is then call'd § *Apochema* (Ἀπόχημα,) *Reſonatio* in *Latin*.

A *Contra-fiſſure* is an imaginary Thing; it was far from being eſpous'd by all the

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* Ἀ ῥήγνυμι *frango*.
† Ἀ θρίξ, τρίχος, *capillus*.
§ *Ab* ἀπὸ, & ἦχος, *ſonus*.

Ancients; *Galen* in his Book of the Uſe of the Parts, jeſts with it, in the Example of the *Pot and Bell*, which *Phyſicians* had made uſe of to explain it. The *Cranium* being made of ſeveral diſtinct Bones, hinders a Fraction from being communicated from one Bone to another; becauſe the Violence of the Stroak is deadned at the next *Suture*, which would not happen if it were all of one Piece; ſo that there is room to conclude, that all the Reaſons they brought on this Head, are falſe and contrary to the Laws of Mechanicks.

That *Contuſion* which takes away the Equality and Contiguity of the Bone, is call'd § *Enthlaſis* (Ἔνθλασις) or * *Eſphlaſis* (Ἔσφλασις) that is a Depreſſion or Fracture with a *Splint*. Which is divided into three Sorts, to wit, [*] *Ecpieſma*

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* *Ab* ἐν & θλάω, *tundo.*
§ *Ab* εἰς & φλάω, *contundo.*
[*] *Ab* ἐκ & πιέζω *premo.*

Ἐκ-

(Ἐμπίεσμα) is a Depreſſion of the Skull, where the *Splints* preſs upon the *dura mater*; § *Angiſoma* (Ἀγγίσωμα,) is a Depreſſion where a *Splint* ſeparated paſſes under the Sound, near the Body of the Brain. * *Camaroſis* (Καμάρωσις) a *Vault*, is the third Sort of Depreſſion, of which there are five Kinds.

In the firſt, one Part of the Bone whilſt it is diſunited, dips, and the other riſes.

In the ſecond, the Bone dips, and is depreſſed without any Fiſſure.

In the third, there is a deep Incloſure, where the Edges are bent downwards, and the Middle is elevated.

In the fourth, the Bone, as we have ſaid, riſes of it ſelf.

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§ *Ab* ἄγγ& *vas* & σῶμα, *corpus.*
* *A* Καμάρα, *Camera.*

In

In the fifth, the second *Table* of the Bone is depreſs'd, and the firſt riſes again.

When the *Sutures* are ſeparated, they make a Kind of Fracture, which *Hippocrates* calls * *Diaſtema* (διάστημα) in *Latin*, *Intervallum*; but it is rather a Separation, than a Fracture, and ſeldom happens.

The *Dura Mater* may ſuffer many Ways; firſt by a *Tenſion*, caus'd by an Orifice made in, or a Separation of the *Cranium*; it may be prick'd or lacerated by *Splints* of a *Bone*, or elſe compreſs'd by *Blood* extravas'd, the which corrupting cauſes an *Inflammation*.

The *Brain* may be hurt by a *Commotion* or *Concuſſion* of all its Subſtance. We may judge of a Fracture by the Violence

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* Διὰ & ἵστημι, Sto.

of

of the Stroak, and by the *Inſtrument*. If there be a Wound there, we judge of it eaſily by the Eye and the Touch. Sometimes the Fracture is ſo ſmall, that it does not appear. The *Ancients* advis'd us to put *Ink* upon it, and to cleanſe it, in Order to ſee if it penetrates; for my Part I can't ſee the Uſe of this Advice, becauſe, after we have cleans'd it, and perceive it to penetrate, we muſt regard all the *Symptoms* nicely, in order to know whether we muſt trepan or no.

The Signs, which aſſure us the *Dura Mater* is hurt, are a Weight, a Pain, an Inflammation, and a bloating of the *Eyes*, bleeding at the *Noſe*, *Eyes*, *Ears*, and *Mouth*. Theſe Signs almoſt always accompany a Fracture, and indeed it ſeldom happens that a Fracture, is ſo attended, but the *Dura Mater* is hurt, prick'd, and compreſs'd by *Splints*.

The Signs, which demonſtrate, that the *Brain* is hurt, are, the Patient upon the Stroak falls down, he loſes his *Speech*, he

he falls into a *Syncope*, he vomits, his *Fæces* flow involuntarily, a *Fever*, a *Delirium*, a *Lethargy*, and *Apoplexy* succeed; these are evident Signs of a Commotion. It is not difficult to give the Reasons of all these *Symptoms*; as for the *Symptoms* of the *Dura Mater*, the Pain is great and acute, principally on the Part fractur'd, because it is press'd and prick'd by the *Splints* of the Bone, and by the *Acrimony* of the extravas'd *Blood*, which ferments, pricks, and brings on an Inflammation.

The Weight of the *Head* proceeds from the same *Blood* extravas'd, that compresses the Parts; the Inflammation and Swelling of the *Eyes* supervene, by Reason of the (*Veins* which water them) Inability of discharging their *Contents* into the *Sinus* with the same facility, because of the Compression, Tension and Inflammation of the *Dura Mater*, which makes the *Blood* coagulate, ferment, and bring on the Swelling and Redness of the *Eyes*.

The

THE *Interruption* of the Courſe of the *Blood*, is the Reaſon alſo, why the *Veins* of the Eyes, the Noſe, the Mouth and Ears, open and bleed.

UPON the Commotion of the Brain, the Patients fall down to the Ground, becauſe the ſmall Filaments of the Nerves, which are within the Brain, are compreſſed by the Fall. This Compreſſion interrupts the Courſe of the Spirits, which run continually into the Muſcles, to keep them in Action; ſo that the Interruption of the Spirits hindring the Spring of the Muſcles, which ceaſe to be further extended, as their Function requires, the Patient muſt neceſſarily tumble to the Ground.

THE *Loſs of Judgment*, proceeds alſo from the Spirits, ceaſing to flow into the Organs of Senſe. The *Syncope*, and involuntary Efflux of the *Fæces*, happen from the Privation of Spirits in the

Heart and Inteſtines, occaſion'd from the ſaid Compreſſion of the Nerves.

The Vomiting proceeds from the Rapidity of the Courſe of the Spirits, into the Fibres of the Stomach, after having been ſtopp'd for a while, which occaſions a Sort of Convulſion in this Part.

The *Fever* and *Delirium* ariſe from the irregular Motion of the Spirits, and from the unequal Preſſure of the Brain.

The Return of the *Fever*, with Shiverings are Signs of an Abſceſs in the Subſtance of the Brain, from the Particles of Blood extravas'd and corrupting there.

The *Lethargy* and *Apoplexy*, proceed from the Subſidence of the nervous Canals, the Compreſſion of the Arteries and Veins, from the Effuſion of Blood upon the Subſtance of the Brain. The Prognoſtick of ſuch Symptoms is eaſy, but the Conſequence dangerous. A Fracture *in Cranio*, is not dangerous of it ſelf, but only

only with reſpect to Parts contain'd within the Bones.

A Fracture with a Fiſſure, is leſs dangerous than that which is accompanied with a *Contuſion*. The Prejudices done to the *Dura Mater*, are more or leſs hazardous according to their Degrees.

THE Subſtance of the Brain hurt is always dangerous, altho' ſome Authors have aſſur'd us, that Part of the Brain has iſſued from the Wound, and yet have been cur'd.

A Commotion, or Concuſſion is dangerous according to its Symptoms.

ALL the World knows, that Wounds of the Head are more or leſs dangerous, according to the Place where they are; becauſe the Pieces, of which it is compos'd being more or leſs thick and ſolid, it happens pretty often, that a ſmall one is broken alſo more eaſily, than a thicker Piece.

Wounds of the Head, with a Fracture in the *occipital* Bone, are very dangerous, by Reason of the *Cerebellum*, the *Medulla Spinalis*, and the lateral *Sinus*'s, which are contain'd within. When the *Stroak* is violent, these Parts receive a great Shock, which presently hurries on troublesome and mortal Symptoms. We have Reason, however, to say, that the least dangerous Wounds are those of the *os occipitis*, because being the thickest of all the Bones of the *Cranium*, a violent Stroak is requir'd to fracture it. Moreover, as it is the most depending Part of the Head, when there is a Fraction there, and we are oblig'd to trepan, the Matter has a freer Egress; and we may add, that the *Extravasation* of the *Blood* on *dura Mater* is not so easily made, which is a great Advantage to the Patient.

The easiest Part of the *Cranium* to be fractur'd, is that Part of it, call'd by *Hippocrates*, *Bregma* (Βρέχμα,) and that which we call, the *Fontanella*; it is the Place

Place where the *Parietals* unite with the *Coronal*, and where the *ſagittal Suture* Ends. The Reaſon, why this Part is always thinner and feebler, is; becauſe it is the laſt that *oſſifies* after the Birth. The famous *Kirkerin* aſſures us, that in many Adults he has found it membranous, from whence we muſt not be aſtoniſh'd, if this Part ſhou'd be eaſily fractur'd; but in Recompence, the Danger is not ſo great in ſuch a Caſe as elſewhere, and many affirm to have ſeen ſome Portion of the Subſtance of the Brain thruſt out after conſiderable Fractures, where the Patients nevertheleſs have been cur'd. There are many grave *Surgeons*, who have aſſur'd us of theſe Facts; but the ſame can't be ſaid of Wounds of the *Cerebellum* and *Medulla Spinalis*; for the leaſt Hurt, which happens to them, cauſes Death to the Patient.

Wounds of the Temples are alſo dangerous, and cannot be cur'd without Difficulty; whether it be that the Artery there

there being open'd, a conſiderable *Hemorrhage* follows, which 'tis hard to ſtop, by Reaſon of the Motion, which is made from Time to Time in the Jaws; or that the *Crotaphite Muſcle* being hurt, *Convulſions* often happen, which are always attended with ill Symptoms; and becauſe we can neither ſpeak nor eat without the Action of this Muſcle, it often happens, that the Hemorrhage, which we ſeem to have ſtopp'd, returns afreſh; ſo true is it, that the Cure of Wounds depends on the Repoſe of the Part injur'd.

Inciſions, which we are oblig'd to make in Wounds of the *Crotaphite*, are likewiſe dangerous; becauſe if the Wound of this Muſcle be large, its *Antagoniſt* contracts, and then the Mouth is turn'd on one Side, which hinders the Patient's eating.

Fractures which happen upon the *Sutures* are yet more dangerous than elſewhere, not only from the ſmall Fibres of the *Dura mater*, which are torn aſunder by

by the *Violence* of the Stroak; but alſo by Reaſon of the *Extravaſation* of *Blood*; which occaſions the Difficulty there is in knowing them, as *Hippocrates* has well obſerv'd in his 5*th* Book of *Epidemicks*, where he affirms, that he has often been deceiv'd.

Fractures on the *Sinus frontalis*, run *Matter* for a long time together, becauſe they are fill'd with Glands, which ouſe every Moment a mucous *Liquor*, which runs into the *Cavity* of the *Noſtrils*, and which is one of the Origins of the *Mucus* of the Noſe, upon which we muſt obſerve, that the Air comes out ſometimes thro' the Wound of theſe *Sinus*'s, with Force enough to move the Flame of a *Candle* from Side to Side; which is an evident Proof, that they are open towards the *Cavity* of the *Noſe*.

The *Sinus frontalis* is not in every Perſon; they who have a flat *Forehead*, commonly have none at all: But ſuch as have a high *Forehead*, have always this

Place

Place from the *Coronal* more jutting, and the *Sinus* are ſurely found in ſuch Perſons.

Celſus, and ſome others have obſerv'd before now, that *Wounds* with *Fractures* on the *Sinus frontalis*, can hardly be conſolidated. But enough of this Affair, let us now ſpeak concerning the Advantage of Medicines, which we muſt apply to the Head.

Scultetus, and ſeveral others apply immediately upon the *Dura Mater*, *Oil of Roſes*: *Celſus* orders to apply *Vinegar*; but all of them are deceiv'd, and their Practice is irregular, for the following Reaſons; firſt, *Oil*, whoſe *Particles* are ramoſe, bungs up the ſmall *Tubes* or *Pores* of the *Dura Mater*, which hinders the *Circulation of the Blood*: The *Vinegar* alſo by its Acidity, coagulates and fixes the *Blood* circulating in the *Capillary Veſſels* of the *Dura Mater*.

THE Remedies therefore we muſt uſe on this Occaſion, ought rather to be charged with ſubtle and penetrating Particles, and if the *Inflammation* of the *Dura Mater* be conſiderable, and that it begins to change, then we muſt quit all the more gentle Penetrants, and uſe ſpirituous *Liquors* themſelves, ſuch as *Spirits of Wine*, and ſuch like, whoſe Particles are ſubtile, penetrating, and therefore proper to break the *Obſtructions*, and to hinder the *Coagulation* of the *Blood*.

THE *Plaſters* which we are oblig'd to employ for Wounds of the Head, ought always to tend to hinder the *Coagulation* of *Blood*, in tempering the Acid. An Affair we ought above all to take great Care of, is to dreſs the Lips of the *Wound* with *Cotton*, and to put it dry upon the Bone, to the End that the Matter which iſſues from the Edges of the Wound, may be ſuck'd up; leaſt it ſhould ferment and alter the Bone. We muſt alſo take Care, we don't expoſe the Wound too much to

the Air, becauſe, that being charg'd with acid Particles, wou'd make an *Exfoliation*, and perhaps a *Caries*, which wou'd make it a long and difficult Cure.

Laſtly, To Wounds of the Head, we muſt not uſe Oil, or any other unctuous Medicines, for the Reaſon we have ſpoke on above, which is that theſe groſs *Bodies* by their adhering and *ramoſe* Particles ſtop up the ſmall Tubes, compoſing the Bone, and remain engag'd there; which occaſions the Fluids, circulating within, to ſtand ſtill, grow acid and ferment, and the volatile Salts to fly up, from which Accident the Bone turns carious, or a Shiver falls off, and thus there will happen an *Exfoliation*.

THERE are ſome *Practitioners*, who embrocate the Wound all round with *Aſtringents*, which they do in Order, as they ſay, to hinder an *Inflammation*; but it appears to me, that they deceive themſelves ſtrangely; for as in every *Inflammation*, there is an Obſtruction, we muſt ſurely

ſurely avoid all Remedies, which are of an obſtructive Nature, and all the World knows ſuch are aſtringent Medicines.

When the *Dura Mater*, and the *Brain* are hurt, it often happens, that in leſs than 24 Hours a *Fungus* ſprings up; which has been ſeen as large as a *Hen's Egg*. This *Fungus* ariſes according to the ingenious *Malpighi*, from ſmall *Glands* which compoſe thoſe Parts, and which being ſupplied with ſuperfluous Nouriſhment, occaſion this *Fungus*.

This fleſhy *Excreſcence* is form'd upon the *Dura mater*, it grows as the *Blood* abounds, ſo that we ought to ſtop up the Orifice of the *Trepan* very exactly. The Practice is to conſume them with proper *Eſcharoticks*. If this *Fungus* have a narrow *Baſis*, we may make a *Ligature*, or cut it with the *Sciſſers*.

CHAP. XVIII.

Of the Operation of the Trepan.

THE *Trepan* is not applied upon the *Sinus frontalis*, by Reaſon of the Cavity; nor upon the Sutures, becauſe we muſt ſhun the Fibres of the *Dura mater*; nor upon the *Temples*, but in a preſſing Occaſion; nor alſo upon the Fracture, becauſe the *Trepan* cou'd not be ſupported; nor *laſtly*, on the Middle of the *Coronal* and *Occipital*, by reaſon of an internal Eminence. We muſt always apply it as near as poſſible to the *Fracture*, and make the *Inciſion* a Day before we *Trepan*, if nothing urges, to the End that the *Blood* may not hinder the *Operation*.

THE

THE *Inciſions* are made in different Manners, according to the Place where the Fracture is: In many Places of the Head, we make them crucially or longwiſe; upon the *Crotaphite* and *Occipital Muſcles*, in the Form of an *V*, that is, that the Union of the two Legs, muſt be at the Bottom of the *Crotaphite*. The *longitudinal Sinus* in this Place, will be more uſeful, and we ſhall thereby cut fewer Fibres. The greateſt Part of the Practiſers make the *Inciſions* at the *Forehead*, in the Figure of a 7 or a *T*. Whenever Neceſſity does not oblige us to make them in this Manner, we muſt always follow the Wrinkles of the *Forehead*, and above all never to make the *Inciſions* on the *Forehead* crucially, nor cut the *Lips* of the *Wound*.

WE dilate the *Wound* ſufficiently to diſcover the *Fracture*, we cut alſo the *Pericranium*, to the End the Teeth of the *Crown* may not tear it. If *Symptoms* don't oblige us, we don't take off the Dreſſings

Dreſſings till Morning, we clean the Bone, and we ſee if it be fractur'd. If there be any Piece ſeparated, we take it away with the *Forceps*: But if we cannot, we apply the *Trepan*.

After having ſtopp'd the Ears of the Patient with *Cotton*, we make him lean his Head upon a firm *Prop*. We place the *Trepan* below the Fracture; we preſs gently, when we come to the *Second Table*. We often take off the *Trepan* in order to take away the pouder'd *Bone*; before we apply the *Crown*, we make a *Hole* with the perforative *Trepan*, to ſecure the *Pyramid* of the *Crown*. When the Circle is ſufficiently made, we take away the *Pyramid*, and we replace the *Crown* in continuing to turn gently round. We often take the *Trepan* off in order to try how much of the *Bone* remains to be bor'd; for altho' we preſs equally, it happens, that the *Cranium* is bor'd more on one Side than another, which obliges us to preſs upon the Part leaſt bor'd. This Inequality

quality proceeds often from the *Bone* being unequally thick.

BEFORE the *Bone* is intirely bor'd, we apply the *Peircer*, in order to lift it up; we muſt alſo often move it with the *Levatory*, that we may take it away without Violence. The Piece being taken away, the Edges of the *Bone*, next the *Dura Mater*, are unequal, which we take off by the *Lenticular*. If there be a conſiderable Depreſſion, we lift it up with the *Levatory*, and we take off the *Shivers* from the *Dura Mater* with falſe Tents. We put a ſmall *Sindon*, of the Size of the *Hole*, with a *Thread* at it; we dip this firſt in *Spirits of Wine*, mixt with *Mel Roſarum*; we fill the *Hole* with *Doſſils*, dipt in the ſame *Liquors*, and the Wound we dreſs with *Pledgits* dipt in *Tincture of Myrrh*, and fill up with *Compreſſes* dipt in warm Wine. The *Chamber* muſt be warm, ſhut and free from Noiſe; the Dreſſings muſt all be applied warm.

THE

THE *Dura mater* is ſometimes inflam'd ſo much, that it comes forth at the *Hole*, ſo that we muſt always take Care to ſtop it well up. Sometime *Fungous* Fleſh grows upon the Part, which we muſt take off with *Deſiccatives* and *Aſtringents*.

WHEN Blood and Matter lodge between the *Brain* and *Dura mater*, we muſt open with a *Lancet* to give Vent to the Matter, and to deceive the By-ſtanders, it might do well to hide it among the falſe *Tents*, and pretending to wipe ſomething off, pierce the *dura mater*.

WE muſt ſometimes apply more *Trepans* than one, to give Vent to the Matter, or to get all the ſhiver'd Pieces of Bone. The *Exfoliation* is a Work of Nature.

WE apply the *Trepan* for the Pricking and the *Compreſſion* from *Splints*, in order to give Vent for the Matter and to apply Medicines.

THE

THE *Ancients* alſo us'd it to ſupply the *Expulſive Bandage*; but this uſe is Imaginary.

THERE are three Sorts of *Trepan*, the *Perforative*, the *Exfoliative*, and the *Indented*. The firſt makes the *Hole* of the *Pyramid*; the ſecond, was ſuch as the Antients us'd to ſee if the Fracture penetrated, but 'tis uſeleſs; the laſt is a round *Saw* endented for taking off the Piece.

CHAP. XIX.

Of the Fiſtula Lacrymalis.

THE *Fiſtula Lacrymalis* often follows an *Abſceſs* form'd in the greater *Canthus* of the Eye, which turns into an Ulcer, degenerating into a *Fiſtula*. In this Diſeaſe there is always an *Obſtruction* in the *Lacrymal* Duct, ſo that the *Tears* having no Paſſage for themſelves thro' the *Noſe*, run involuntarily over the Edges, which is unſeemly, and very troubleſome to the Patients.

THE Ancients ſay, that a *Fiſtula Lacrymalis* was caus'd by an *Abſceſs* on the *La-*

Lacrymal Gland ſeated at the greater *Canthus* of the *Eye*; but there is no *lacrymal* Gland at that *Canthus* in Man; they took this little Jutting, in the Manner of a *Caruncle* at this *Canthus*, for a *lacrymal Gland*, which is only a Reunion of the interior Membrane of the Eyelids. There are at the Sides of this Eminence two ſmall Holes, which we call *puncta Lacrymalia*, which are the Openings of a ſmall membranous *Sac*, which lengthens in the Manner of a Sheath in the Hole of the *os unguis*; and it is the Ulceration of this *Sac*, which cauſes the *Fiſtula lacrymalis*, and which hinders the Paſſage of the Tears into the Noſe.

The Operation conſiſts in making a Hole in the *os unguis* to give Way for the Seroſities to drop thro' the Noſe. We make an Inciſion obliquely and ſemicircularly around the *Canthus* of the Eye, taking Care not to cut the Tendon of the *Muſcle* of the Eylids. Having diſcover'd the *os unguis*, which is always carious, we put a Probe near the Paſſage, we ſlip

a ſtrait *Cannula* over the Probe, in order to introduce an actual Cautery to pierce the Bone; we apply the Cautery as often as we find it neceſſary: We dreſs the Wound, and we hinder the Fleſh from ſtopping up the Hole we have made into the Noſtril by Tents. We lay on a Plaſter, a Compreſs and Bandage, which is a *Handkerchief* ſloping.

CHAP. XX.

Of a Cataract.

THE Cataract is an Obſtruction of the *Pupilla*, caus'd by a viſcous Humor, collected in the watery Humor between the *Cornea* and *Uvea*, and ſometimes, if not moſtly, it is the Cryſtalline which becomes opac before, when it is intirely form'd, it hinders the Light; there are tranſparent Cataracts, where the Object appears, as thro' a Cloud; there are alſo white, black, yellow, green and livid Cataracts.

THE

The black, yellow, and lead-colour'd, Cataracts are difficult to be cur'd, by reaſon of their Thickneſs. The Pearl colour'd, are curable by the Needle.

THE *Cataract* muſt be dry'd and harden'd to bear the Needle, which without this Circumſtance wou'd paſs thro' it, as thro' Water. If in rubbing the Eye, and if in the *Dilatation* of the *Pupilla*, the *Cataract* continues firm without dividing into Parcels, it is ripe and in a State to bear the Needle; in ſhort, if when the Rays of a Candle paſs thro' a Viol full of Water, or a *Globe* of Cryſtal, the Perſon affected perceives Colours, the Cataract is not yet thick enough.

To couch it, we make the Perſon ſit in a clear Place, expos'd to the Light; one holds their Head firm behind; we cover the ſound Eye, to hinder the other from moving, and we direct the Patients to turn their *Eye* towards their *Noſe*. The *Surgeon* pierces the *Conjunctive*, near the

Co-

Cornea on the Side of the leſſer *Canthus*, with a round Needle: It muſt be puſh'd boldly into the *Cavity*, the Point appears preſently, we lift it above the *Cataract*, to the End we ſhou'd depreſs it below the *Pupilla*, where it muſt be kept ſome time.

If the *Cataract* continues below the *Pupilla*, the Patient is cur'd; but if it mounts again, we are oblig'd to couch it again, and to preſs it down more ſtrongly. Then we draw the Needle gently out, and we ask the Patient, if he diſtinguiſhes *Objects*. We meet with *Cataracts* as hard as Parchment; theſe Sorts of *Cataracts* remount as ſoon as they are couch'd, ſo elaſtick are they.

The Veſſels of the *Conjunctive* ſometimes diffuſe their *Blood*, and this it is, that occaſions an *Ophthalmy*; but in a few Days after, theſe Accidents ceaſe. We put upon the Eye a *Compreſs* dipt in *Plantane Water*, mixt with the White of an *Egg*.

The Patient muſt take Care not to move the Eye for ſome time; the Needle with which the *Operation* is perform'd, is always a hafted one, and is either round or flat.

CHAP. XXI.

Of the Polypus.

THE *Polypus* is an *Excreſcence* of Fleſh, which bungs up the *Noſtrils*; and as its Root is not always double or manyfold, ſo its Name cannot be properly always denominated *Polypus*, ſince it is moſt commonly *Monopus*; * there are ſome *Polypus*'s attended with Pain, and are then *cancerous*; others are *ſcirrhous*, or hard, but without Pain: Thoſe *Polypus*'s which are ulcerated, are manifeſt *Cancers*. The *Operation* can only be perform'd in the ſoft, the white, the red, and hanging *Polypus*'s.

* πολὺς & πῶς many Feet, μόνος & πῶς one Foot.

THE *Surgeon* pinches the *Polypus* at its *Root*, with *Forceps*; he turns these *Forceps*'s from one Side to the other, and drawing insensibly, tears it out by the *Roots*; having tore it out, the Patient must draw a little *Wine* up their *Nostrils*; and we apply astringent *Pouders*, in Order to heal up the *Ulcer*.

THE *Polypus* which passes down into the *Throat*, below the *Uvula*, may be drawn out, thro' the *Mouth*, by curv'd *Forceps*'s: But after all, these fleshy *Excrescences* are subject to grow again.

CHAP. XXII.

Of the Hare-Lip.

WE call the *Hare-Lip*, when the upper Lip is cleft; it is a Fault in *Conformation*, or it comes by ſome *Accident*: If it be old, we muſt cut the Surface of the *Edges*, which are always callous, with *Sciſſars*; if the Lip adheres to the Gums, we muſt ſeparate it, and hinder it from re-uniting with *Bolſters*.

THE Ancients propos'd to make an Inciſion lengthways, or *Creſcent-wiſe* in the Cheeks, to make the *Edges* approach more eaſily; but there wou'd remain a Scar, not very agreeable to the View. 'Tis for this Reaſon better to *unbridle* the Lip in

detaching it as much as poſſible, there is nothing to be fear'd from it. If, however, the *Deformity* be conſiderable, we muſt not undertake it.

We muſt not perform the *Operation* in *Infants*, who are as yet in the Cradle. Their continual Crying, the *Softneſs* of their Skin, the Neceſſity they are under of conſtantly ſucking the Breaſt, wou'd hinder, without doubt, the Re-union. We muſt then wait till they are three or four Years old.

The *Operation* requires no great *Preparation*: After having mark'd the Diſtance of the *Stitches* with *Ink*, we paſs a threaded Needle into the two Lips of the *Wound*, around which we turn a *Thread*, or cut the *Point* of the Needle with *Cutting Pincers*; we put as many Needles in as are neceſſary, and ſmall *Compreſſes* under the *Points* of the Needles we dreſs the Wound with *Balſom*. The Wounds of the Lips do eaſily reunite. The *Citatrix* being

being made, there always remains a ſmall *Furrow* above the Place of the Angle of the *Hare-Lip*; for this Reaſon we muſt make a ſmall tranſverſe Inciſion in the Skin; lay on a *Plaſter*, *Compreſs*, and an uniting *Bandage*.

CHAP. XXIII.

CHAP. XXIII.

Of the Bronchotomia.

THE *Bronchotomia* is an *Aperti-on* of the membranous Part of the *Trachæa Arteria* between any two of the Cartilaginous Rings; we don't perform this *Operation*, but when the Patient is in Danger of *Suffocation*; which happens by an Inflammation of the *Larynx* in an *Agnina*, which hinders *Respiration*.

THE Operation is perform'd by pinching the Skin transversly, upon which we make an Incision; we dissect the Muscles *Sterno-hyoidei*, the whole Length of the Line, that joins them, and we take Care, we don't touch the *Glandulæ Thyreoideæ*, or the recurrent Nerves, which are plac'd laterally along the *Trachæa Arteria*; for if

if we ſhou'd cut them, the Patient wou'd loſe his Voice.

THE *Trachæa Arteria* being diſcover'd, we open the Interſtice of the Cartilages with a Lancet, we make the Aperture between the third and fourth Ring next to the *Cricoides:* Before we draw the Lancet out, we introduce a Probe, upon which we ſlip a ſhort *Cannula* flat and crooked, to the End the Patient may breathe eaſily. We put upon the Orifice of the Cannula a little Cotton, with a Plaſter pierc'd, to the End the Air may not enter all at once.

CHAP. XXIV.

CHAP. XXIV.

Of Amputation.

THERE are two Occaſions, which oblige us to amputate; the firſt, when the Parts are ſo mortified, and the Bones ſo broken, that it is difficult to reduce them: The ſecond, when the Gangrene and Mortification are ſo great, that all Remedies are to no Purpoſe.

A *Gangrene* is an immediate Diſpoſition to a Mortification of the ſoft Parts. A *Sphacelus*, is an entire Corruption. The Word *Gangrene* ſignifies to gnaw (from γράω *comedo*) and hence it is, that *Guido* call'd it *Eſthiomene*, altho' an *Eſthiomene* ſignifies

ſignifies alſo gnawing Ulcers, and corroſive Tettars.

The Signs of a Gangrene, that is, when after an Inflammation, there ſupervenes a white Colour, which often changes into a Yellow or Purple; the Pain diminiſhes, livid Veſicles full of a yellow or bloody Seroſity appear; in fine, the Senſe of the Part is loſt, the Part becomes heavy, and the Epidermis is ſeparated from the Skin.

In the Sphacelus the Colour is livid, the Part is cold, and ſoft; an inſupportable Smell exhales and all feeling is loſt. The Cauſes of a Gangrene, ſays *Guido*, are general or particular. Under the General, are comprehended all the Cauſes, which hinder the Spirits or Blood to run to the Part. Under the particular Cauſe, three are comprehended; the firſt, a great Cold, Application of Remedies too cooling, Burns, great Fractures, Diſlocations, Contuſions, Ligatures too ſtrict, and great Hemorrhages happening to Wounds.

In General, what makes a Gangrene, and Mortification of any Part, is the Diſſipation, the Abſence, or Concentration of the ſpirituous Parts of the Blood, which ought to enliven that Part, or rather the Interruption of the Courſe of the ſame Blood, and its Coagulation.

All theſe Cauſes may act the greateſt Part of the Time ſeparately, and ſometimes all together. The Ancients have alſo made a Cauſe of a Gangrene, which they term'd *occult*; 'tis from thence, ſay, they, that a Gangrene happens in the Plague, or a Carbuncle, which cauſes ſometimes, in 24 Hours, an entire Mortification of a Part: 'Tis to the ſame Cauſe they attribute a Gangrene, which happens after malignant Fevers; and ſometimes after the Small Pox. In ſhort, it is from the ſame Foundation, that they pretend to explain a Gangrene, which happens from *Poiſons* and *Bites* of venomous Beaſts.

It is certain, that all these Things are often Causes of a *Gangrene*; but can't we give Reasons, without having Recourse to occult Qualities? In the *Plague*, for Example, the *Carbuncles* do often introduce a *Gangrene*, because the Humor that produces them, is equal to an *Aqua fortis*, which corrodes the Flesh, and cauterises the Vessels; from whence it must of Necessity mortify the Part. The same may be affirm'd of the Matter of malignant *Fevers*, and *Small Pox*, where the *Blood* is charg'd with acrimonious and corrosive Particles. If it happens, that this *Acrimony* cannot be conquer'd by Nature, or Medicines, it makes a Lodgment upon some Part, where the acrimonious and corrosive Humors gnaw the Flesh, cauterise the Vessels, and render the Bones carious.

The same may be said of *Poisons*, which act by their *Acrimony*; some of which are acrid and acid, and others acrid and lixivial; which produce the

ſame Effects as actual Cauteries; thus are diſcover'd thoſe occult Cauſes, which the *Ancients* believ'd ſo incurable.

With reſpect to the Differences of a *Gangrene*, it is not difficult to infer them, from what we have ſaid in ſpeaking of their Cauſes, and we might eſtabliſh one from each particular Caſe. It is worth remarking, that the Signs of *Gangrenes* are not always the ſame, and that they differ in the different Species of Gangrenes. We will enlarge no more, for fear of being led too far out of our Road.

The Gangrene which happens to old Men, and to *Hydropicks*, is always incurable, and therefore it is in vain to attempt the Operation in them. That which befalls moiſt and tender Parts, above all the Internals, is dangerous, and moſt commonly terminates in a *Sphacelus*. That which comes from an external Cauſe, as from *Contuſions*, *Burns*, *Inflammations*, is eaſier cur'd than others.

In

In ſhort, a Gangrene is more readily cur'd in robuſt Perſons, than in *Cacochymical* ones, and in the young than old.

As there is no Diſeaſe more preſſing, than a Gangrene, there muſt therefore be none which requires more ready Aſſiſtance, ſince the Mortification of a Part threatens the Death of the whole Subject: We muſt then hinder the Progreſs of ſo troubleſome a Malady by all the Means poſſible; it is uſeleſs to attempt the Cure of a *Sphacelus*, there can be no Return from Death to Life, and we muſt have Recourſe to Medicines, the Iron or Fire.

We muſt then have Recourſe to Fire, and the Iron, according to *Hippocrates*, for fear the Evil ſhou'd encroach upon the neighbouring Parts. In the mean while, in the Beginning of a Gangrene, we uſe a great many *Remedies*, which often have a very good Effect. We immediately order a convenient Diet, and we don't preſcribe *Bleeding* or *Purgatives*, till we have the Advice of a Phyſician.

After

After which we give *Remedies* proper to deſtroy the predominant *Acrimony*, to wit, ſuch as ſweeten and correct the lixivial or acid *Salts*, or ſuch as fortify the Part. And they contribute either to retain the ſpirituous Parts of the *Blood* from eſcaping, or to diſengage them when they are accumulated, or to produce a new *Fermentation* and *Separation* of the bad *Leaven*, and to cheriſh the *Heat* and *Spirits* in the Part.

These *Remedies* are numerous enough, according to the *Practitioner*'s *Idea*, and *Experience*. In general, we may ſay, that all the *Internal Remedies* are *Diaphoretick*, *Cardiack*, and *Vulnerary*.

The External are *Scarifications*; whether it be, that they diſengage the Parts, or rather diſcharge a *Quantity* of *Blood*, and extravas'd *Humours*; or, *laſtly*, make *Room* for the Medicines to penetrate deeper, and produce a more ſenſible Effect.

THESE *Topicks* are vulnerary *Decoctions*, as thoſe which are made of the two *Birthworts*, *Periwinkle*, *Angelica*, *Golden Rod*, *Wormwood*, *Scordium*, *Vinceto-xicum*, *Rue*, with *Wine or Water*.

THE *Tinctures* of *Aloes*, *Olibanum*, *Myrrh*, made with *Spirit of Wine*, *Lime-water*, *Phagedenick-water*, *Salt-water*, or others of this Nature. In ſhort, the Cure is different, according to the Difference of the *Cauſes*, which produce it. We ſhall make a ſhort mention of each particular *Cauſe*.

IN a *Gangrene* which happens to old People, from a Defect of Spirits, and to *Hydropical* Perſons, we muſt uſe nouriſhing and ſpirituous *Diet*; ſcarify the Parts, and bathe them with the *Remedies* we have ſpoke of.

WHEN the *Gangrene* is caus'd from *Cold*, and that the Part is not as yet mortified, you muſt cauſe the Patient to be re-

remov'd near the Fire, rub and cover the Part with *Snow*, or hold it for ſome time in cold *Water*, and rub it with *Spirits of Wine*.

In *Inflammations*, *Fractures*, *Contuſions*, and *Aneuriſms*, *Bleeding* is the readieſt *Remedy*, to hinder the *Extravaſation* of *Blood*, *Scarifications* are always neceſſary.

In *Fractures* and *Luxations*, we muſt replace the Bones, and relax the *Bandages*. Then we make uſe of the ſame *Remedies*. In *Ulcers* and *Burns* which terminate in Gangrenes, *Lime* and *Plagedemick-waters* are wonderful: In the *Scurvy*, we muſt mix *Antiſcorbuticks* with the ordinary *Remedies*.

When the Gangrene is occaſion'd by any *Malignity*, beſides the *Cordials* given internally, we muſt mix with the uſual *Topicks*, *Diaſcordium* and *Venice Treacle*.

In

In ſhort, if all our *Care* and *Remedies* are ineffectual, and the Gangrene perceptibly gains Ground, we muſt then reſolve ſoon upon the *Amputation* of the Part: 'Tis true, this is a laſt Refuge, becauſe it is cruel and dangerous; but as it is the only Chance for Life; Neceſſity ſerves for our Excuſe.

We muſt never *Amputate* in the Articulation without an abſolute Neceſſity. If it is the Leg, we muſt amputate as near the Knee as poſſible, altho' the Mortification were in the Foot; becauſe a long uſeleſs Stump is burdenſome, and they can't carry a wooden Leg ſo well in that Suppoſition. We muſt obſerve, that we muſt avoid amputating upon the *Aponeuroſis* of the Muſcles, which are fix'd upon the Eminence, on the upper Part of the Tibia, and cut a little lower; for the Accidents are troubleſome which follow thereupon, ſuch are Convulſions, Inflammations, and long Suppurations.

If it be the Thigh we are to amputate, we muſt perform the Operation near the Knee, for the Convenience of a wooden Leg. If it be an Arm, cut as little off as poſſible. We will deſcribe the Manner of amputating a Leg.

We place the Party upon the Edge of a Bed-Couch, or Chair, making your Aſſiſtants hold him behind, a *Servant* holds the Member above the Knee, and draws the Skin up. We put under the *Ham* a pretty thick *Compreſs*, and then we make the *Ligature*, which we lock with the *Torkinet*. Before we lock it, we place a ſmall *Paſtboard* below the *Ligature*, at the Place of the *Torniket*, to hinder the Skin from flying, which wou'd occaſion Pain. This Sort of *Ligature* is more commodious, the Party feels not much Pain, and the Skin wrinkles not at all, we lock it as much as we can. We make another *Ligature* under the Knee, which only ſerves to make the Fleſh firm.

The

THE *Surgeon* ſtands between the Patients Legs, makes an *Inciſion* with a curv'd Knife round the Member to the Bone, and with the Back of the Knife ſcrapes the *Perioſteon*, and cuts the Fleſh which is between the *Bones*.

I have ſaid, that he ought to be plac'd between the Patients Legs, to the End, that he may bear up his *Saw* upon the two Bones, in order to cut them both at once, which he could not do ſo conveniently in any other Situation.

WE begin to ſaw the *Fibula*, and then the *Tibia*; the Leg being cut, we undo the *Ligature*, which held the Fleſh tight, we relax the *Torniket* to ſuffer the *Blood* to run a little, and alſo for ſeeing the Veſſels which we muſt tye; we catch hold of them with ſmall *Forceps*, over which a *Knot* is prepar'd for tying the Veſſels; or which is ſurer, we paſs a Needle with wax'd Thread under the Fleſh where the Veſſels are, and ſo draw it through, and

tye it ſafe. The Veſſels ty'd, we undo the *Torniket*, we fold up the Fleſh of the Member, and we pull down the Skin to cover the Stump. We put ſmall *Compreſſes* upon the Veſſels, a dry Pledget upon the Bone, and many Pledgets charged with aſtringent Pouders; a large Pledget charg'd with the ſame *Pouders*; a *Plaſter*, a *Compreſs* cut like a *Malteſe Croſs*; four *longitudinal Compreſſes*, and one *Circular*, which wraps up the whole, a *Circular Bandage*, and the *Capline*. It often happens, that after having amputated the Leg, ſome time after the *Suppuration*, the Bones thruſt out beyond the Fleſh; which falls out, by Reaſon the Bones were not ſaw'd near enough to the Fleſh: Wherefore it is good to put, after the *Inciſion* made, an End of Fillet cleft at the Extremity, with which we draw the Fleſh on high; by this Means we can cut the Bone nearer the Fleſh, than we can otherwiſe.

THE *Surgeons* ſometimes make a Difference between *Pinking*, *Scarifications*, and *Slaſh-*

Slaſhing. The firſt are ſlight, and only penetrate the Skin, call'd *Pinking*. The ſecond are deeper, and are call'd *Scarifications*. *Laſtly*, The third pierce to the Bone, and 'tis term'd *Slaſhing*. But above all, we muſt take Care of the Veſſels.

THESE Inciſions muſt not be in the ſame *Line*, but one among another; for otherwiſe they make Bridles. By theſe Inciſions and Medicines, we often hinder the Progreſs of a Gangrene.

CHAP. XXV.

CHAP. XXV.

Of the Reunion of a Tendon.

IT is a long Time ſince *Tendons* have been us'd to be cut, ſince *Galen* forbid the Practice of it, becauſe, ſays he, they can't be conſolidated, and *Convulſions* happen upon it.

Guido Cauliacus, who liv'd above 300 Years ago, and many others before him, practis'd it with Succeſs; but ſince him it has been condemn'd by all the Writers in *Surgery*, inſomuch as it was quite laid aſide till the *French* again attempted it, and with good Succeſs.

THERE

THERE are two *Reaſons* which oblige us to make the *Suture* of a *Tendon.* The firſt, when the Wound is freſh, and the ſecond, when it is cicatriz'd. If the Wound is cur'd, the Surgeon muſt open it to diſcover the *Tendon*, which is cut. The two Extremities being found, we muſt cool the Edges as little as may be, that they may reunite. We make 'em ply, and bend 'em to make 'em approach each other; and 'tis an Affair we muſt take particular Care of, becauſe the Tendons always retreat. We ſcarce make Sutures, but on the Extenſors.

THE Method of performing this Operation, is in the following Manner. We take a ſtreight and flat Needle, threaded with a double Thread, which we draw thro' a ſmall Compreſs, ſtopp'd at the End; we pierce deep enough into the Tendon, from without inwards, and we cut the Thread long enough. We have another ſmall Compreſs pierc'd with two Holes, into which we paſs the Thread; with

with theſe Threads we make a Ligature, under which we put another ſmall Compreſs. *It is in this Operation, as in moſt others, we ſhould ſee it done, to be able to do it well.* We dreſs the Wound with *Balſam.* It is to be obſerv'd, that the Part muſt be ſuſtain'd by a Machine, which holds it faſt, to the End that the Extremities of the of the *Tendon* may not retire from each other.

CHAP. XXVI.

CHAP. XXVI.

Of the Cesarian Operation.

THIS Operation is call'd the *Cesarian Section*, becauſe it is deliver'd down to us, that *Cesar* was born in this Manner.

WE make an Inciſion on the dead Woman, from the *Navel*, to the *os Pubis*, lengthways on the *Muſculi recti*, we open the *Peritonæum*, and the Womb appears preſently; we make an Inciſion towards the Bottom, in order to draw out the *Infant*.

CHAP. XXVII.

Of the Paronychia.

THIS alſo term'd *Panaritium*, or with us a *Whitlow*, which is a Tumour at the End of the Fingers.

To open this *Tumor*, we make an Inciſion at the Side of the Finger to the Bone, when the Matter is contain'd between the Bone and *Perioſteum*. If we ſhou'd make Inciſion any other Way, we might cut the *Tendons* of the *Flexors*; but making the Inciſion Sideways, there can be no Fear of this Accident.

CHAP. XXVIII.

Of the Application of Cauſticks.

CAUSTICKS are not to be apply'd upon nervous Parts, nor upon the Extremity of a *Tendon;* but in the Middle; they are not apply'd upon Places, where there are large Veſſels.

To apply them, we firſt rub the Place, where we wou'd put them, with a warm Linnen-cloth, to the End, that their Effects may be quicker. After which, we apply upon the Place a *Plaſter*, pierced with a ſmall Hole, and we bruiſe the *Cauſtick*, and lay it upon the Hole of this *Plaſter*; we cover the *Cauſtick* with another *Plaſter*, then lay on a *Compreſs* and bind it up.

CHAP. XXIX.

Of Setons.

THIS Operation was much in uſe among the Ancients; it was the moſt common *Remedy* for Diſeaſes of the Head, and Defluxions on the Eyes; becauſe they thought, that it made a ſtrong *Revulſion*, and that it was like a double *Cauſtick*; but *Bleeding*, generally in all *Fluxions*, is a Remedy much more efficacious; becauſe it diſcharges the Habit of the Body; which a *Bundle* of *Thread* that paſſes only thro' ſome *Teguments*, whoſe Diſcharge is inconſiderable, cannot ſo well effect.

THE Effect of a *Cauſtick* is not more advantagious, and 'tis evident, that *Bleeding* and *Purging* are much more profitable than

than all ſlow *Suppurations*. However, as they are recommended, the Manner of making them, is thus.

We make the Patient turn back their Head in order to pinch the Skin the Eaſier. A Servant takes hold, with both Hands, of the Skin below the Hair, drawing it upwards, and the *Surgeon* pinches it with *Pincers*, that have Holes in them, (to leſſen the Senſe of the Part), we paſs thro' theſe Holes and Skin, a large Needle threaded with ſilken *Threads* bundled up to together, dipt in *Oil of Roſes*, and then we bind on a *Compreſs* dipt in the ſame.

CHAP. XXX.

Of Cupping Glaſſes.

A *Cupping Glaſs* is a large *Veſſel*, with a narrow Entrance; we apply them upon ſoft Parts to draw violently and with Force.

THEIR Differences are only in their *Matter*, *Size*, and *Figure*, which Things are not worth our Notice.

Cupping Glaſſes are dry or moiſt; the *Dry* are ſo call'd, becauſe we don't ſcarify the Skin. We call them *Moiſt*, when we do ſcarify. When we apply a *Cupping-glaſs*, we put within it a little *Tow* ſet on fire, or rather a Ring of *Card*, with the

the Ends of a *Bougee* of *Wax-Candle*. The Veſſel being applied upon the Part, the *Flame* inſtantly goes out, and the Skin riſes up within. The ancient *Philoſophers*, knowing nothing of the *Properties* of *Air*, call'd this Riſing a *Fuga vacui*; which the Weight of the *Atmoſphere* explains beſt; for the *Flame* of *Wax-candle* lighted rarefying the *Air*, that within is rarer and lighter than the external *Air*, which therefore preſſes the Skin into the *Glaſs* till the internal *Air* is again compreſs'd to an *Equilibrium* with the *External*.

I cannot ſay, that the late *Invention* of *Cupping-Glaſſes*, have any Advantages over thoſe us'd before, for the Skin riſes high enough for our Purpoſe with the old ones.

They were us'd upon many Occaſions by the Ancients. *Firſt*, they apply'd them upon the Part affected to draw out the Humour; upon this Score, they apply'd them upon peſtilential *Carbuncles*, to draw out the

the Venom, upon the Bite of venomous *Animals*, and upon *Venereal Bubo*'s.

Hippocrates alſo apply'd *Cupping-Glaſſes* to Womens *Breaſts*, to ſtop the immoderate Flux of the *Menſtrua*. He alſo apply'd them upon the *Spleen*, and *Liver*, to ſtop an *Hermorrhage* at the *Noſe*. The Ancients alſo apply'd them to the *Neck* and *Shoulders*, to hinder the Fluxions, which fall upon the *Eyes* and *Throat*, and, in ſhort, to the Groin and Thighs, to provoke Women's *Menſtrua*; but at preſent their Uſe is not ſo extenſive.

A Short

DISCOURSE

ON THE

Venereal Diſeaſe.

CHAP. I.

Of the Diſinition and Signs of the Lues Venerea.

AMONGST the many that have wrote of the *Venereal Diſeaſe*; ſome ſay that the *Lues* is an occult *Malady*, and others, that it is an univerſal *Intemperies*, expanded thro' the whole Body. By

these vague *Definitions*, they leave the *Understanding* in doubt, and throw us into Despair of ever discerning a Disease, which of its Nature appears so hidden.

They who say it is a general *Corruption* of *Humors*, contracted by an impure *Coition*, by a *Communication* of some malignant *Vapors*, have without doubt, more Reason than the first: They have yet more than these, who defin'd it by an universal *Intemperies*, without saying, 'tis hot or cold; but these Reasonings giving us no clear *Idea* of the *Virus*, which occasions the *Lues*, nor of the manner it acts; let us try if we can better unravel this Affair.

We see, by the Spots, the *Pustules* and *Ulcers*, which infest the whole *Habit* of the Body, manifest Signs of a general *Corruption*; and we know by the Experience of an infinite Number of unfortunate People, that the *Lues*, most an End, communicates it self by an impure *Copulation*.

It

It is not, that we are ignorant, that this Diſeaſe cannot happen in another Manner; every one knows, for Example, that if an *Infant* ſuck an infected Nurſe, it will be ſpoil'd, or that an Infant it ſelf being infected by the *Fault* of the Parents, may give it the Nurſe; or that, in ſhort, a ſound Perſon lying in Linnen infected with this *Poiſon*, which is communicated to it by a *Pocky* Perſon, may be alſo diſeas'd; for it is certain, that in all theſe Circumſtances the *Pox* may be caught; but will always be true to ſay, in tracing its *Original*, that it is in impure *Copulation*, that this *Infection* is firſt communicated by: Wherefore this *Definition* is more conſonant, than the others; for tho' we know not how to expreſs the Differences by one and the ſame *Definition*, we cannot be at a Loſs to give one juſt enough for the *Pox*.

This *Diſeaſe* more dangerous than a *Plague*, (not to offend thoſe it makes Sufferers,) inſinuates it ſelf gently, reſembling at its off-ſetting ſome ſlight *Indiſ-*

poſitions: But when it is once lodg'd, and that it has taken Root, it begins to be felt and known, not only by *Spots* and *Puſtules*, which infect the Skin, but alſo by dry, round, and red *Puſtules*, which ſeize upon the *Forehead*, *Lips*, *Breaſt*, *Anus*, and natural Parts; and to imprint, in the *Frontiſpiece* of the *Houſe*, a *Character* of its uglineſs, it degrades the Face of all its *Ornaments*, which *Nature* has beſtow'd on it, it takes away the *Hair* of the *Chin*, the *Eye-lids*, and *Eye-brows*; preſently the Body becomes full of ſordid *Ulcers*, the *Countenance* loſes its lively and natural Colour, the *Eyes* become livid, and ſhed involuntary Tears, the *Ears* tingle, the *Noſe* becomes ſtinking and infeſted with *Ulcers*, which conſume it, the *Mouth* alſo ulcerates, the *Teeth* are painful, the *Amygdales* are bloated, the *Uvula* relaxes, the *Voice* breaks, the *Shoulders*, *Sternum*, and the Middle of the *Arms* and *Legs* feel ſuch exquiſit Pains, that it ſeems as if they were pierced with Needles. The Nerves, Tendons, Ligaments, and *Perioſteum* ſuffer divulſi-

ons,

ons, which occaſion cruel Pains, which augmenting at Night, continue in equal Vigour till Morning, when the Hopes of Comfort, and a little Repoſe riſe with the Sun.

OVER and above this *Train* of *Evils*, there follow Nodes, *Exoſtoſes*, and *Caries* of the Bones, which betoken their *Corruption*, and of which we are more aſcertain'd, when we know that one of theſe three Couriers, to wit, a *Gonorrhæa*, a *Shankre*, and *Bubo*, have mark'd out its Abode.

CHAP. II.

Of the Origin of the Pox.

IF we consider the rough *Draught* I have given of the *Lues*, it is easy to perceive, that it is a dangerous *Malady*, and we must not be surpriz'd, that so many different Names have been given it, which have been drawn from the *Country*, from whence it is supposed to have sprung. Altho' to speak the Truth, there is no Nation, that does not disown it, and which does not reject the *Shame* of having given Rise to such a *Monster*; from hence it is, that the *French* have heretofore, given the Name of the *Spanish*, or *Neapolitan* Distemper; the *Italians*, *Spaniards*, and *English*, call it the *French* Disease; and others,

others, the *American*, *Venereal*, or *Great Pox*.

THE Newneſs of theſe Names impos'd at the ſame time, upon their *Hatred* to each other, is a Sign that the *Ancients* had no Knowledge of this Diſeaſe. *Hippocrates* in the third *Book of Epidemicks*, ſecond *Section*, mentioning a *Hiſtory* of a like *Illneſs*, ſets down the Signs of the *Lues*; but becauſe he ſays, theſe *Symptoms* were *Companions* of an ardent *Fever*, which never, or very rarely, happens in this Diſeaſe; it is to be ſuppos'd he ſpeaks of another *Malady*.

Galen and others agree, that *Hippocrates* ſpeaks of a violent *Plague*. *Gordonius* a famous Phyſician of *Montpellier*, who liv'd in the thirteenth *Century*, ſpeaks of a *Gonorrhæa* and *Shancres* of the *Penis*, which are got, ſays he, by lying with impure Women: But he does not ſay, theſe *Maladies* were virulent, or that they had any other *Conſequences* attending them, than ſimple *Heat*.

THE

The *Leproſy*, for which the paſs'd Ages built ſo many *Hoſpitals*, has great *Marks* of the *Pox* in its exteriour *Shape*; inſomuch, as ſome Phyſicians believ'd, that it was the ſame *Diſeaſe*, which changed into the *Lues* at the End of the fifteenth *Century*; and what confirm'd them in this Sentiment, was, that ſince that Time, whether we have abus'd the *Terms*, or whether we have taken the *Leprous* for *Pocky* People, they have refus'd to receive them into the *Hoſpitals*, whoſe Revenues they have applied to other good Uſes.

To anſwer this Doubt, which is well enough grounded, we ſay, that if we don't ſee ſo many *Leprous* Perſons, ſince the *Lues* begun as before; it is that having taken them for pocky Perſons, becauſe of the *Appearances*, they have cur'd them with Remedies for the *Lues*; mean while we muſt not draw this Conſequence, that the Remedies which cur'd the *Lues*, cur'd the Leproſy; for then the

Lues

Lues and Leproſy wou'd be one Diſeaſe: For we know by ordinary Practice, that one and the ſame Diſeaſe may be cur'd by different *Remedy*.

Let us ſay then with the Vulgar, that the *Lues* has contributed to cure the *Leproſy*; ſince it was the Occaſion of withdrawing the *Salaries* from the Hoſpitals, and let us conclude with the major Part of the *Moderns*, that the *Lues* is alſo as different from the Leproſy, as a Phlegmon from a Cancer; becauſe the *Leproſy*, which is call'd an *univerſal Cancer*, and *atrabilarious*, differs from the *Lues* in this, that of it ſelf, it communicates it ſelf to all People indifferently of what *Temperament* whatſoever, and it is more familiar to *Blood*'s, that are directly oppoſit to *atrabilarious*. Thus the *Ancients* ſpeak, when they wou'd denote *Melancholick Conſtitutions*.

The Leproſy is uſually hereditary, it is ſlowly generated by an ill *Regimen* of Diet. The Lues communicates it ſelf

moſt frequently by Coition, and ſurpriſes in a little Time Perſons of a plump Habit, and ſuch as live high. The Leproſy occaſions little or no Pain, but the *Lues* becomes inſupportable.

We might ſhew other Reaſons alſo, to make the Difference of theſe two Diſeaſes more evident: In ſhort, Authors, who have wrote of Phyſick, wou'd have ſpoke of the *Lues*, if they had known it.

Some think, that it did not begin to reign in our *Continent*, till the Years 1433 or 1434, where it ſhew'd it ſelf.

The better Part of Hiſtorians and Authors, who have ſpoke of the *Lues* ſince that Time, ſay that is *new* with reſpect to us; but that it is ancient, as other Diſeaſes, with Regard to the *American*, as at *Florida*, where it is as common, as it is eaſy to be cur'd, and, it is no leſs frequent in the Weſtern Parts of *America*, add the ſame Authors, than the Small-Pox in *Europe*. They ſay alſo, that the Peo-

ple

ple of the Country take of the Decoction of *Guaiacum* freſh, with which they mix the Juice of a certain Plant, which grows in the Country.

THIS bad Merchandiſe, as other Authors ſay, came from the other *World* by *Chriſtopher Columbus*, who made a *Voyage* in the Year 1492, from whence he came back in 1494. The better Part of the *Soldiers* being return'd into *Spain* with this *Lues*, which they got in the *Indies*, were ſent to the Army againſt the *French*, where they ſow'd it ſo well, that the *French* Army were more endamag'd by this Diſeaſe, than their Arms.

IT is not Hiſtorians only, that have ſpoken diverſly of the Origin of this *Lues*; *Van Helmont* has a Fancy pleaſant enough, he ſays, that it proceeded from Copulation of a Man and ſome Beaſt which had the Farcin; but without doing Injury to the Reputation of ſo great a Man, one may juſtly look upon this Opinion as Viſionary.

THERE is good Reason to believe, that this *Disease* is as ancient as the *World*; and if we read the *Debauches* often, the Pains which *Tacitus*, and *Suetonius* attribute to *Tiberius* with *Reflexion*, we may assure our selves, that he had not the Disease of *Naples*, but that of *Capræa*, the Place of his Diversions and ordinary Pleasures.

CHAP. III.

Of the Cauſe of the Lues.

FROM the *Hiſtory* I have given you of the *Lues*, we ought to be convinc'd, that it is of the Number of *Contagious Diſeaſes*, that is, of thoſe which communicate themſelves by the *Touch* of an infected Perſon to others who were before free.

LET us now ſee of what Nature this *Virus* is, and how it acts to produce its Effects. If we conſider, that a little Leaven is capable to lift up the whole Maſs of Paſte, and that a little Barm ferments Tuns of Liquor, that ſome Drops of *Spirit of Vitriol*, or *Juice of Citron* immediately

diately curdle *Milk*, and that afterwards, the leaſt Part of this fermented Subſtance, has the Power of fermenting others, and theſe others alſo *In Infinitum*, if I may ſo ſay; we ſhan't be ſurpriz'd, that a little *Saliva*, a few Drops of corrupted Humor, or ſome volatile Parts exhaling from a pocky Perſon, ſhou'd enter into another yet uninfected, and occaſion the ſame Fermentations: But as all theſe Leavens are acid and tartareous, we have all the Reaſon in the World to believe, that the Venom of this Malady communicates it ſelf by Virtue of ſome Tartareous Parts, which conſtitute the Nature of this *Virus*. It is not credible, that this *Acid* continues always the ſame; at firſt Seiſure, we have Reaſon to look upon it as compos'd of ſome volatile Parts, capable of raiſing a ſimple Fermentation, which opens the Principles of the *Blood*, and which ever ſeizes in Proportion as the *Blood* exalts it ſelf; in ſuch Sort, as that this Acid becomes Arſenical, corrupts and thickens the *Semen* and other liquid Subſtances,

ſtances, pricks the *Nerves*, and *Tendons*, and makes the Bones *carious*.

THE Experience of many unfortunate Perſons, who complain ſoon after impure Embraces, gives us ſo ſenſible Proofs, that there is no Room left to doubt of it. They feel preſently an Itching upon the *Glans* and *Prepuce*, with Pain and Inflammation, which is follow'd ſoon after with many rebellious, malignant and corroſive *Ulcers*, which are the true Effects of an acrimonious and ſharp *Humor* like *Aqua fortis*, which make ſuch deep Eſchars in the Parts. All theſe Accidents may happen by other Means, as we have already ſaid, and to other Parts; as for Example, to a Child's Mouth, which has ſucked an infected Nurſe, or to a Woman's Breaſts, which has given ſuck to an infected Infant, or to the Hand of a Midwife, bringing infected *Women* to Bed, or *vice verſâ*, or laſtly in the Habit of the *Body*, by lying in infected Linnen.

It is not hard to comprehend how this *Virus* paſſes into the *Maſs of Blood*; its penetrating and active *Particles* enter firſt into the *Capillary Veins*, from thence into the larger, till it at laſt it inſinuates into the Habit of the Body by the *Circulation*; and it is in this Manner, that all contagious Diſeaſes communicate themthemſelves.

It is beyond doubt, that the *Blood* is the Matter and Aliment, which nouriſhes the Parts, and this *Nouriſhment* is the *Foundation* of all the *Oeconomy*, which cauſes the Animal to ſubſiſt, and live. If the *Blood* have all the Qualities requiſite for good, laudable, and natural *Aſſimilation*, there is no Fear, but the Animal will perform all its *Functions* well, and live commodiouſly: But if it is corrupted, this *Oeconomy* will be overturn'd; we ſee *Troubles* all over them, all their *Functions* will be imperfect, or impeded; there is no Part, but will ſuffer, and be attacqued with Diſeaſes. We have prov'd by

Rea-

Reaſons and Experiences, very ſenſible, that the Cauſe of the *Lues* is an acrimonious Acid, and that it is its Points, which diſturb the Blood, and affect its Circulation; let us now come to the Methods of Cure.

CHAP. IV.

Of the Cure of the Lues.

THE greater Part of ſuch, as have undertaken to explain the *Venereal Diſeaſe*, and to give us the Cure of it, have uſually ended where they ought to have began; it is not, that this *Method* changes therefore, either the Manner of Treatment, or that it is more difficult to be comprehended; but I have thought, that we ought to follow the *Malady*, Step by Step, and attack it in its Birth, and Beginning.

LET

LET us give the Means of hindring, if poſſible, that its *Forerunners*, don't lodge within us; becauſe if once it enters, we muſt make uſe of the moſt potent Remedies, to extirpate it, for the ordinary ones have no Place.

CHAP. V.

Of the Gonorrhœa.

WE have said, at the Beginning of this *Treatise*, that the *Forerunners* of the *Lues* were three in Number; the *Gonorrhœa*, vulgarly call'd a *Clap*, a *Shankre*, and a *Bubo*.

THE *Gonorrhœa* is the most frequent of all, the most difficult, and the longest in curing: But it is not so often follow'd by a *Pox* as the other two. We call it *Gonorrhœa*, because it is a continual *Flux* of a glairy, purulent, and corrupted *Matter*, from the *Urethra*, attended with a very painful *Heat* in making *Water*.

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The Reaſon of this *Running* is an Ulcer in the *Proſtatæ* and *Glands* all along the *Urethra.* Theſe *Proſtatæ* Glands are filled with Veſicules, like *Hydatides*, full of a glairy *Humor*, which diſcharges it ſelf into the *Urethra ;* they open at the Place of the *Seminal Veſicles*, where there is a ſmall *Caruncle*, which is their *Valve.* In ſhort, the immediate Cauſe of the Diſtemper, or Ulcer, is an acrimonious *Humor*, communicated to the Parts by an impure *Embraçe* : Altho' this continual Running cauſes a great *Diſſipation* of Spirits, and that it appears, it would weaken the Body in a ſmall Time, and emaciate it; nevertheleſs we ſee, that ſuch, as have this Illneſs, keep up very well for a long Time, without any very ill *Appearance*, ſave a *Paleneſs*, becauſe this *Diſcharge* is an *Impurity*, and upon *Condition* they apply for a Cure in Time, and to expert Perſons, a *Pox* ſeldom follows. The manifeſt Signs of this *Diſtemper* are a Running of a yellow, brown, or green *Matter*, ſometimes alſo bloody, a great and intolerable *Pain* in making

making *Water*; the Ulcer is the Occaſion of the former, and the *Inflammation*, and *Sharpneſs* of the Urine, the Cauſe of the latter; and as the *Inflammation* is caus'd by the Ulcer, and accompanies it a long time, after it is form'd; ſo alſo the painful *Heat* proceeds from the *Water* paſſing over it, and accompanies it alſo a long time.

The *Prognoſtick* Signs, which give us to underſtand the *Event* of this *Diſtemper*, are the Nature of the Pain, and the *Quality* of the *Matter* which flows. If the Pain be little, and the *Matter* white, this Diſeaſe won't be dangerous; it will be ſoon cur'd, and with few proper *Remedies*; but on the contrary, if the *Pain* be intolerable, and the *Inflammation* be ſo large, that it ſeizes not only upon the *Glans*, but alſo the *Corpora Cavernoſa*, ſo as to cauſe an *Erection*, and that the *Matter* is yellow, or greeniſh, the *Diſtemper* is ſuſpicious, virulent, and very hard to cure; and thus *Gonorrhœa*'s differ in more and leſs; they have all ſomthing

of

of a *Virus* in them, and have nothing common to ſimple *Heats*, of which we have no Deſign to treat here.

To treat this Diſtemper, according to the *Rules* of Art, we muſt have Regard to three Things, to wit, to the *Cauſe*, which is a *Virus*; to the *Diſeaſe*, which is an Ulcer; and to the *Symptoms*, which are *Heat* and *Pain* we feel in making *Water*.

We take off the Ulcer by *Deſiccants*, the *Virus* by *Purgatives*; and the Pain and Heat of Urine by *Refrigerants*; but as we cannot well anſwer theſe three *Indications*, at one and the ſame time, and that we muſt obſerve the Order and Time of the *Remedies*, before we attempt the Cure of the Ulcer; we muſt take off the *Virus*, which produces and foments it, and before we take of this, we muſt moderate the Inflammation, which hinders the carrying off the *Virus*, and deſſiccating the Ulcer; ſo that we muſt begin

gin with the Inflammation, then take off the *Virus*, and finish with the Ulcer.

The *Virus* acts slowly and insensibly in the Beginning; afterwards it insinuates it self deeper, and it corrodes some small Capillary Vessels, so that from this corrosive Blood issues forth, attended with Heat; the third and following Days, the Inflammation increases; there is a *Phlegmon* around the Neck of the *Bladder*; which makes the Passage of the Urine difficult: This Inflammation sometimes communicates it self to the *Intestinum rectum*, by reason of its nearness, and to the *Glans*; from hence it arises, that they who are troubled with the *Stone*, feel a greater Pain at the End of the *Penis*, when they make Water, than they feel in the *Perinæum*, or at the Sphincter of the Bladder. The 6th Day, sometimes sooner, sometimes later, there runs forth an Humor like unto Milk, which afterwards thickens and continues to run in the Consistence of *Sperm*: This Humor is a Mixture of imperfect Seed and *Pus*, which comes

comes from the Ulcer, not only in the Paſſage, but alſo in the *Proſtratæ*, and often the *Veſiculæ Seminales*.

We take off the Inflammation by *Refrigerants*, and as nothing cools more than Bleeding, which takes off the Plenitude, we ſhou'd often begin with it, particularly where the the Inflammation is violent; and before we attempt it, we ought to give an Emollient Gliſter, not for the Sake of emptying the Bowels of their Excrements, but becauſe it ſerves for a *Fomentation* to the *Rectum* and Neck of the Bladder, and allays their *Heat*, and eaſes their Pain, and does the ſame Good here, as *Fomentations* do, (compos'd of *Emollients*) in Inflammations elſewhere.

The Patient muſt obſerve to live upon a cooling and moiſtening Diet; ſuch are Soops in Summer, in which are boiled *Lettice*, and ſuch cooling Herbs; he muſt refrain from Wine at the Beginning, and ought to drink Whey or Ptiſans,

into which he muſt often put a little *Sal Prunellæ*, which may be ſoftned with a little Pouder of *Liquorice*; he muſt avoid any Meats, pepper'd or ſalted, and to be ſhort, he muſt avoid Wine, and Exerciſe of all Kinds.

He muſt take the firſt Day ſome Emulſions, or ſome Glaſſes of Whey, in which any cooling Syrup may be diſſolv'd, as *Violets* or other; after having ſatisfied the firſt *Indication*, that is, after having taken away the Inflammation, and we find that the *Penis* is no longer inflam'd, and the Patient feels no more Pain nor Heat, we muſt betake our ſelves to the ſecond Intention, which is to take off the *Virulency* by *Purgatives*. We muſt always begin the Cure by the moſt gentle Purgatives, ſuch as *Caſſia*, and *Cryſtallum Minerale*, which may be mix'd in a Pint of Whey, which the Patient may drink off at twice; after theſe Remedies, they may be purg'd in different Ways.

By a Decoction, in the following Manner, Boil *Sena* of *Alexandria*, 4 Drachms,

Caſſia

Caſſia half an Ounce, *Cardamoms* one Drachm, in a Pint of Water, down to half a Pint, ſtrain this Liquor, add to it two Ounces of *Syrup* of *Solutive Roſes*, *Cinnamon-water*, three Ounces; take a large Glaſs of it Evening and Morning, ſo as that it may work gently, and the Patients may go about their Affairs; this as it works, muſt be continued for ſome following Days.

If this does not cure the *Gonorrhœa*, they muſt ceaſe taking this Decoction; and if the Matter flow plentifully, and be greeniſh, they muſt betake themſelves to the uſe of ſtronger Purgatives: Such are *Pills*, in which muſt be *Mercurius dulcis*, and of which we will give the Reader a Deſcription.

'Take Amber, Aloes Succotrina,
'Scammony, Flowers of Brimſtone,
'of each a Drachm; Cinnamon and
'Mercurius Dulcis of each a Scruple,
'mix them up together with any Sy-
'rup into a Maſs of Pills. *N.° 70.*

Least the Virulency ſhou'd paſs into a *Lues*, the Patient may take three or four of theſe Pills, that is to the Quantity of a Scruple, and they will infallibly carry off the Virulency, and then we may, without any fear of Inconvenience, ſatisfy the third Intention. I ſay, without fear of any Inconveniency, becauſe if, before we have purg'd enough to take off the *Virus*, we ſhou'd make uſe of deficcant and aſtringent Injections, which hinder the running of of this corrupted Matter off, according to Natures Deſign, it wou'd throw it ſelf either upon the Teſticles or the Groin, and ſo occaſion either an Inflammation of them, or a *Bubo*.

We muſt not then make uſe of Injections, till towards the End; or where the Matter ceaſes to run, or runs but little; and that it is white, and of the Conſiſtence of Whey; becauſe, theſe are Remedies of no great Effect, and which we muſt lay no great Streſs upon, ſince they cannot penenetrate to the Ulcer; nevertheleſs, becauſe

Uſe

Uſe will have it ſo, and that there may be ſome Ulcer in the *Urethra*, which continues the Running, it wou'd be of uſe to make the following Mixture up and inject.

Take Smiths-water and Claret, of each a Pound, diſſolve in it a Drachm of white Vitriol; inject a little of this warm'd, Morning and Evening.

Or,

Take Plantane-water a Pound, white Troches of Rhaſis a Drachm, Sugar of Lead half a Drachm. Inject it warm, Morning and Evening.

But if theſe Remedies anſwer not our End, there is Reaſon to fear, that the Patients will be pox'd. Wherefore the beſt Method in this Caſe, is to obſerve a ſtrict Diet for fifteen Days, and to ſweat with

with the Decoction of *Guaiacum*, Morning and Evening in a *Bagnio* for a small Time; for the Use of this Decoction will evaporate the Remainder of the *Virus*, and will perhaps throw out Scabs, or Ulcers, after which they must cease from sweating, and expect a Cure from the *Grand Remedy*.

CHAP. VI.

CHAP. VI.

Of Ulcers of the Penis.

ULCERS of the Penis, commonly called *Shancres*, are the moſt common Fore-runners of the *Lues*; they are the Effects of virulent Humors, which fix upon the Surface of the Prepuce, and which inſinuate themſelves between the *Glans* and *Prepuce*, during an impure Embrace. It is obſervable, that the *Jews*, or others circumcis'd, take not this Diſeaſe ſo frequently as others do, who are not; and they, whoſe *Glans* is uncover'd, are not ſo ſuſceptible of this Infection, as they whoſe Prepuce hangs to low; and for ſuch as waſh after Venereal Embraces, they frequently

quently eſcape any Infection, which without this Precaution wou'd have been unavoidable.

The Signs of virulent Ulcers, are the Roundneſs, the Whiteneſs, the Calloſity of the Edges, and a ſharp Pain. Thoſe of the Prepuce are more dangerous, than thoſe of the *Glans*, and one only is more dangerous than many together. Altho' theſe Ulcers are often follow'd by the *Lues*, nevertheleſs they are not ſo tedious, or ſo hard to cure as a *Gonorrhœa*; becauſe the Ailment being partly outward, Remedies can be the eaſilier apply'd; but alſo, altho' it is uſual to cure it, one is not aſſur'd to be free from the Pox.

In curing a *Shankre*, we muſt regard two Things, to wit, the *Virus* and the *Ulcer*: We dry up the Fountain by purging with the ſame *Remedies*, which we uſe in the *Gonorrhœa*; all the Difference there is, is not to cool ſo much here, neither by Liquors nor Diet, for fear of hindring, in the Beginning, the Suppuration of

of the Ulcer, which we muſt promote by Pledgets charg'd with Suppuratives, mix'd with red Precipitate, or Quickſilver in Turpentine; for the Suppurative carries on the *Suppuration*, and the Quickſilver conſumes the ſpongy Fleſh, makes the Eſchar fall and drys the Ulcer, which coming to Cicatriſe, leaves the Edges hard and callous. *Vigo's Plaſter cum Mercurio*, is a great Help to ſoften it. If after the Eſchar is fall'n off, others ſpring up, we muſt touch the Ulcer with the *Lapis infernalis*; if it yeild not to this laſt Remedy, we muſt have Recourſe to the Diet of fifteen Days, as mentioned in the *Gonorrhœa*, to the End, that if any ill Symptom appear in that Time, we may diſpoſe the Patient for a *Salivation*.

CHAP. VII.

Of a Venereal Bubo.

A *BUBO* is a Tumour happenning to the Glands of the Groin, by Obstructions.

THIS Symptom is advantageous and favourable to such as it happens to, because it often frees them from the *Pox*, which is, as we have said, an Epitome of all Evils.

THE Signs of this Symptom are evident, the Patient has, on the Groin, or on both Sides there, a Pain with a Hardness, which grows insensibly up into a Tumor; and it is certainly a *Crisis* of a *Pox*,

a *Pox*, ſince it ſuppurates eaſily. We muſt then forward its Suppuration by all Means poſſible; for this Reaſon it is, we muſt not turn off the Humors by Bleeding, Purging, Coolers, and Repercuſſives, but on the contrary we muſt heat the Body by Exerciſe and good Diet, not to Exceſs; becauſe all violent Exerciſe, and too heating Nouriſhment, ſuch as Brandies, *Spaniſh* Wines, Garlick, Onions, Pepper, and other Things of that Nature, which by their Particles exhale the more ſubtile Parts, thicken and coagulate the Remainder, and hinder Suppuration, which is generally the Conſequence of a moderate and gentle Heat.

After having regulated their Diet, without premiſing the general Remedies, we muſt content our ſelves to apply ſuch Topicks, as will advance Suppuration, ſuch as *Galbanum*, and other Suppuratives, mention'd in the *Treatiſes of Surgery*, almoſt every where.

THERE are *Bubo*'s, which eaſily come to Suppuration, and others more difficultly. We pierce the firſt Sort, with a Lancet, as ſoon as the Matter is form'd, and the others with a Cauſtick, before they are ripe; becauſe ſhou'd we wait for Suppuration in theſe latter, full of a viſcous and hard Stuff, the Patient might be pox'd firſt.

WHEN the Tumor is great, red and painful, we muſt apply a Train of Cauſticks, and make in the Eſchar a large Inciſion with a Lancet, and keep it open with *Diachylon*, under which is a Suppurative, and 'tis adviſable to keep on theſe Suppuratives a long while.

FOR greater Security we muſt purge the Patient after Suppuration for ſome Days. The Diet and Purgatives ſhou'd be the ſame, which we have order'd for the other two Fore-runners of the *Pox*.

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THE Ulcer being dry'd, we muſt incarn and cicatriſe; if nevertheleſs after all the Help of Phyſick, there ſhould appear any Signs of the *Pox*, we muſt cauſe the Patient to reſolve to undergo the Method, we are going to mention, which is the ſhorteſt and ſureſt, which can be made uſe of in this troubleſome Diſeaſe.

CHAP. VIII.

CHAP. VIII.

Of the Manner of Treating the Lues.

MANY Remedies do contribute to begin the Cure of the *Lues*, but *Mercury* alone can only finiſh it. This proud Diſeaſe yields to no other; it plays with all the Machines made uſe of to extinguiſh it, and it retires ſeemingly from the Patient, only to torture him the more afterwards.

Guaiacum, *China*, *Salſaparilla*, and ſuch like *Drugs* brought from the other World, are no more acknowledg'd for *Alexipharmacks*, or for *Specificks*. Such as we find in our own Continents, are only uſeful for other Diſeaſes; but in this Caſe they

they ſerve to cure ſome weak Spirits of the Opinion, they have of being attack'd with an Evil, which we ought truly to fear, and that they wou'd well deſerve to have, ſince they uſe ſo many *Drugs*, which heat much, fuſe the Blood, and turn it into *Seroſities*, or which in augmenting the *Circulation*, occaſion rather *Obſtructions* in the Muſcles, which cauſe *Rheumatiſms* with inſupportable Pains, which the *Ignorant* look upon as Symptoms of the *Pox*. In ſhort, theſe Remedies often leave an ill Impreſſion on the *Viſcera*, which hurry on *Death* to poor Patients; and we wou'd do much better to change the Diet from drying to Moiſtners. The *Bagnio*'s and *Perfumes*, in which many have dyed of *Syncope*'s and *Apoplexies*, are only Inventions to put an End to this Tragedy the ſooner.

The frequent uſe of Purgatives is very beneficial; but by their *Adminiſtration* only; we cannot root out the *Diſeaſe*. They diſperſe the Puſtules of an ordinary Scab

Scab well enough. but not thoſe of the *Lues.* They diſcharge the Body of a great deal of corrupted Humors, but not of the *Virus*, unleſs it be freſh, and has not ſeiz'd upon the ſolid Parts; for then the *Virus* is ſo inſinuated into the very Marrow of the Bones, that we ſee the Body all over running with Matter, and ſo loaden with *Sanies*, that it is ready to rot and emaciates extremely, unleſs we have *Recourſe* to *Mercury*, which is the only *Remedy* we can employ to eradicate a *Pox*, without the Fear of *Relapſe*, let ignorant Men ſay what they pleaſe.

But if it be true, that *Purgatives* require great Caution in their uſe, how much more does *Mercury* require, which is the *Grand Remedy?* It is not enough to have the Signs of the *Pox*; in order to treat it well, ſee that the Body have not us'd too many *Remedies*, or at leaſt there be no Fever. The Spring and Fall are favourable Seaſons, when Neeeſſity requires it, and we eaſily obtain our

Ends

Ends if we obſerve the following Directions.

AFTER having given a Gliſter or two, we bleed once or twice in the Arm. We purge the Patient with a Potion of *Sena*, Caſſia, and Syrup of Solutive *Roſes*; at Night we cauſe them to bathe in warm Water for two Hours, and an Hour after, we give them a little roaſt Meat. The next Day early in the Morning, they muſt go again into the Bath, where they muſt ſtay as long as at firſt; and after they are come out, or while they are in it, they muſt live on *Soop*, in which cooling and ſoft Herbs have been boil'd. At Dinner they muſt alſo live upon *Broths*; at Night again they muſt enter the Bath, and continue this *Regimen* in the ſame Order we have preſcrib'd, for ſix Days, or more. The *Surgeon* who takes Care of the *Patient*, and who knows his *Conſtitution*, muſt purge him as he judges proper, and muſt change the Water of the Bath daily. The Patient muſt again be purg'd every three Days with the ſame

Remedy we have spoke of, and must even take it in the Bath early in the Morning, about half an Hour after he has been in. The Baths being ended, they must have *Mercury* given to raise a *Salivation*, were these Cautions more punctually observ'd, so many wou'd not fail, as daily do for want of them: For if we give *Mercury* to raise a *Salivation*, we design first to render the *Blood* more fluxile, that it may run more easily thro' the Glands; and when *Mercury* is given, and a plentiful Flux does follow, the Reason of this failure, is our not having comply'd with these Cautions.

Mercury is differently prepar'd; it is sublim'd, precipitated, poudred, or liquid; and according to the different Preparations it is made by, it purges by Vomit, Sweats, by Urine, Stools, and by the Mouth: But in what Manner soever we prepare it, it is always the same, and all this only serves to make it more volatile, and peirce more easily into the Body, for producing the Effects we expect.

Of all the Methods, none is more ſure than a *Salivation;* and to promote it, we uſe divers Means, whether by making them take it by the Mouth, or applying it externally. We give it by the *Mouth*, in a *Bolus*, made up with *Mercurius dulcis* and *Conſerve of Roſes*, or we give red Precipitate made into Pills with a little *Honey*. The Pills have a more conſiderable Effect than the *Bolus*; but they are more violent, and by Conſequence more dangerous, by Reaſon of the *Vomiting*, which they excite, in the Form of a *Cholera Morbus*, this Practice is very dangerous. We apply it externally with Plaſters, Ointments, and Perfumes. Plaſters are inconvenient, and act ſlowly. *Frictions* are more in uſe, than Perfumes; and Perfumes more than Plaſters. Of all theſe different *Methods*, the moſt ſure, the moſt us'd, and the leaſt dangerous is the *Friction* with a *Mercurial* Ointment, which is made with *Hogs-Lard*, and a third or fourth Part *Mercury*, in the manner following.

Take crude Mercury one Pound, with three Drachms of Venice-Turpentine, ſtirring them well together in a Mortar, till the Mercury is kill'd; then mix by little and little two or three Pounds of Hogs-Lard; and bring it to the Conſiſtence of an Ointment, and keep it for uſe.

WHILE the Patients uſes Remedies for a *Salivation*, they muſt keep their Chamber, their Bed, and their Room muſt be kept warm, but not choaking. The Bed-Cloaths muſt be half us'd. When the *Salivation* is over, it is good to cover more. The Shirt muſt be us'd before, and it were adviſable for the Patient to wear *Trowſers*.

THESE Cautions are not ſo uſeleſs, as they may ſeem, for too much Care does no Harm. We make the firſt *Friction* Night or Morning, two Hours before Meals, or faſting in the *Morning*, with four or five Ounces of the Ointment, with

with which you rub the whole *Body*, from the Feet to the Nape of the Neck, except the Belly, and Breaſt; to the End that the *Friction* may have a better Effect, it muſt be rubb'd in before the Fire; or if the Patient is weak, in Bed.

Some *Practioners* don't rub the whole *Body* at the firſt *Friction*, and it is an Affair of great Conſequence to take Care, by Reaſon of the Tenderneſs of ſome *Conſtitutions*, as for Example, in young *Men* and *Women*, to whom a *Salivation* happens, if you only rub the *Soles* of their Feet to the Knee; for this Reaſon, if we ſhou'd begin preſently, and at once to rub the whole Body, we ſhou'd weaken them much, and the Flux wou'd be too violent.

We muſt always obſerve with a careful *Eye*, the Effect of the *Mercury*, looking into the *Patient's Mouth*, from Time to Time, and ſeeing if there be no *Inflammation*, if the *Tongue* does not become white and thick, if the *Amygdalæ* and the

the Palate be not too much ſwell'd, and the Gums are tumefied. we are yet more afraid of the Effect of the *Mercury*, when with all theſe Signs they have a Head-ach, or a ſtrong and ſtinking Breath, a red Countenance, and a Difficulty of ſwallowing their Spittle, by *Reaſon* of a *Roughneſs* in their *Throats*. *Laſtly*, if we perceive Ulcers in the *Mouth*, if they ſpit much, and if they ſpeak with *Difficulty*, by *Reaſon* of the great Heat of the *Tongue* and *Palate*, we muſt forbear the *Friction*.

If the *Salivation* happens not after three or four *Frictions*, there are ſome who uſe Perfumes to raiſe it. They take half an Ounce of *Troches of Mercury*, with *Cinnabar*, which they extinguiſh with *Sage-Leaves*, to mix it with four Ounces of *Marle*, and to make *Troches* to be dry'd. They make the Patient ſit in a Chair, in which there is a *Hole*, under which they place *Charcoal* to burn the *Troches*, and they encompaſs it with a Blanket, in order

der to receive the Steam, which they ſuffer not to touch the Head.

OTHERS make their Perfumes with ſix Drachms of crude *Mercury*, plac'd in a Crucible heated red hot, which they place upon the *Charcoal*.

THERE are *Conſtitutious*, which are ſalivated at the ſecond *Friction*, and others ſo hard to Flux, that we are oblig'd to uſe the *Friction* very often, and at laſt even to give the *Bolus* or *Pills* mentioned above.

THE Method to cure the *Pox* with white or red Precipitate taken by the *Mouth* is very dangerous, as we have ſaid, by *Reaſon* of little Ulcers they occaſion in the *Mouth*, and of the *Vomitings*, which they raiſe with *Violence*; ſo that as a *Salivation* thus raiſed is violent, it is more adviſable to uſe the *Friction*.

AFTER two or three *Frictions* a *Diarrhœa* often happens, which fatigues the Pati-

Patient very much, and then the *Saliva-tion* ceaſes; but to aſſiſt them, you muſt throw in emollient *Gliſters* of Milk and Yolk of Eggs, and uſe Opiate Mixtures; and to temper the *Blood* with ſmooth Decoctions.

We muſt gargle, in Order to dry the Ulcers, with a *Decoction of Barley*, in which is ſome *Mel Roſatum*, or with warm Claret. It is good to touch the Ulcers with *Spirit of Vitriol*, or ſome other *Acid*.

In the Time of the *Friction*, we muſt give the Patient liquid *Nouriſhment*, ſuch as *Broth*, *Gellies*, or poach'd Eggs; and they muſt forſake Wine. At the Beginning of the Salivation, they muſt uſe refreſhing and cooling Decoctions of Barley, and ſuch like, continuing them to the ninth Day. After which, they muſt uſe the Decoction of *China*, *Saſafraſs*, and *Guaiacum* to the End of the Salivation.

If the Salivation is not plentiful enough, or it ſtops, we muſt promote it a freſh by a gentle *Friction*; but if it be exceſſive, we muſt weaken it by ſlight Purgatives, in whoſe Compoſition ſome Acids ſhou'd enter, in order to precipitate the *Mercury*: But *Aurum fulminaus*, or *Flowers of Sulphur* are much better, which ſuddenly ſtop the Effects of the *Mercury*.

It is hard to give a juſt Rule for the Quantity of *Saliva*, during the ten or twelve firſt Days; it is reckon'd more or leſs great, according to the Diſpoſition of the Patient. The middle Meaſure is two Pints a Day, which may ſerve as a Rule for others. It is not without Reaſon, that we ſhou'd obſerve the Quantity of *Saliva*, the Patient voids; and to know it preciſely, the Patients muſt ſpit into a Baſon holding a Pint, to the End its Quantity may ſerve for a Rule to puſh

it forward, if it fails; or moderate it, if it exceeds.

When you see the Salivation ceases, after having run plentifully for twenty, twenty-five, or thirty Days; you must regulate three Things. *First*, You must purge the Patients. *Secondly*, You must make them gargle, to dry the Ulcers, as we have already noted. *Thirdly*, You must make them change their Beds and Linnen. We must purge them, at the End, as we did in the Beginning.

After having purg'd them sufficiently, let them rest for eight or ten Days, let them betake themselves to Wine again, and nourish with good Diet to recover their Strength. If they be nice Persons and lean, they may take every Morning, Asses or Cows Milk, with a Scruple of Pearl in Pouder; for Milk, generally speaking, is a great Assistance in all Diseases, where the Acrimony is

to be corrected. After all theſe Cautions juſtly obſerv'd, there is Reaſon to hope, that the Patients will very ſoon recover their good Habit.

CHAP. IX.

Of the Nature of Mercury, and the Manner of its acting.

QUICKSILVER is a Miracle of a Metal; altho' running like Water, it is nevertheless fourteen Times heavier, and yet evaporates with a gentle Heat. There is Reason to think its Particles round, like little Bullets, and extremely smooth and polish'd; and for the Proof of this Truth, when it is, dissolv'd in *Aqua fortis*, it appears under the Form of little round Bodies, which rise up in Smoak.

THIS

THIS ſuppos'd, it is, methinks, very eaſy to give a Reaſon, why it is fluid and ſo volatile; for its Particles being round, poliſh'd, and gliding, the one cannot entangle the other, or find any Obſtacle to their Motion; and becauſe they are only contiguous, and have no connexion with each other, ſo often as they are mov'd a little quicker than uſually, they take flight and mount.

WE have ſaid, in ſpeaking of the *Lues*, that it was occaſion'd by an acrimonious Acidity, and that all its Symptoms, which accompany it, are rais'd from this Matter; It is then impoſſible to cure it, without mortifying the Points of this Acid; and Experience has made us know, that no Body, ſave *Mercury*, can carry it off.

Chymiſtry informs us, that when we blend *Mercury* with acid Salts, that they unite together, become volatile by Heat, and form a Sublimat. Nearly the ſame Thing happens in our Bodies: For after having

having us'd *Frictions* with the *Mercurial* Unguent, it penetrates the Pores, the Heat of our Body ſublimes it, and meeting with Acids, it joins in with them, and makes a Sort of Sublimat, almoſt in the ſame Manner, as in Chymical Preparations. All theſe acid Points bei entred into the Pores of the *Mercury*, are carried along by the Circulation of the Blood, loaden with this Poiſon, coming to paſs the Glands of the Mouth, raiſes Ulcers in theſe *Salivary* Ducts, which relax and give Way to this Salivation. Thus it is, that *Mercury* carries off the corroſive and acrimonious Salts, which made ſuch Ravage in the Body.

It muſt be obſerv'd, that before we raiſe a Salivation, there is an abſolute Neceſſity to prepare the Patients by Purgatives, becauſe they weaken the Salts, which reign in the Body; and when theſe Precautions are neglected, at the firſt Friction, the *Mercury* mounts with ſuch Violence, that we have ſometimes ſeen con-

conſiderable *Hæmorrhages* from the Ulceration of the Glands of the Mouth.

ALTHO' there remain ſtill ſome Particles of the Salts, after the Salivation; the more ſubtile evaporate by Perſpiration, and the more terreſtrial run off by Urine and Stools. And this is the moſt probable Account, we can give of *Mercury*, in carrying off the *Lues*.

F I N I S.

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